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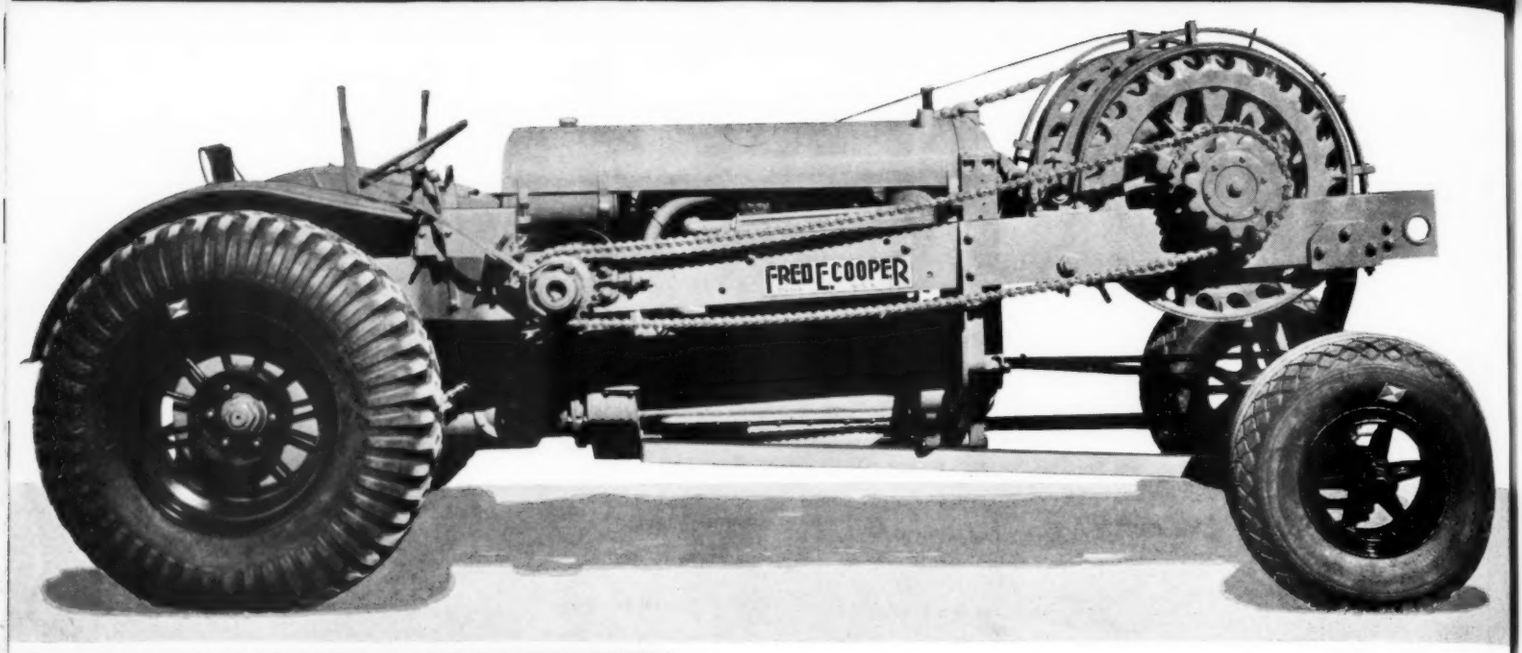


with 510 cu.in. Piston Displacement

340 ft. lbs. Torque at 700 r.p.m.

▶Allis-Chalmers four cylinder, heavy duty, tractor engine with 5″ bore and 6½″ stroke, developing the greatest usable power. Removable cylinder sleeves, inserted valve seats, automatic governor, electric starter, generator, battery, air cleaner, oil Purolator and full pressure lubrication system throughout automatically lubricating all working parts, including wrist pins and rocker arms.

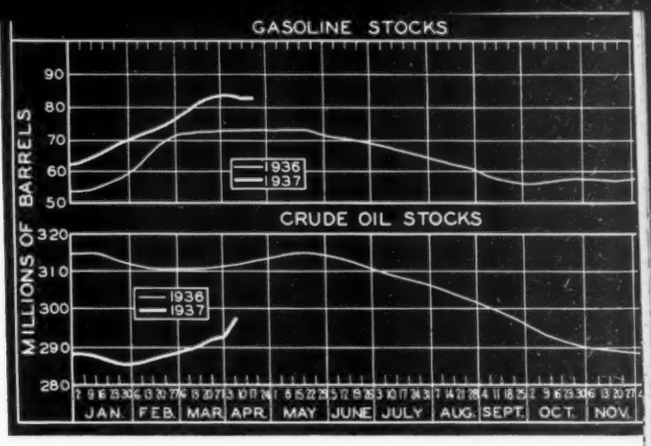
▶High speed road gear, standard 30 m.p.h. at 1200 r.p.m. of engine or 15 m.p.h. at 1,200 r.p.m. Low engine r.p.m. means longer life. Four forward road speeds and one reverse. Foot controlled road brakes, Bendix bus type, heavy, dual duty brakes on both rear wheels. Complying with state laws for safety.

▶One heavy duty tractor type transmission reduces weight, simplifies and strengthens construction, eliminates unnecessary moving parts and places controls conveniently. All winch units have eight line speeds from 48′ to 1133′ per minute. Maximum line pull, 54,032 lbs. at 700 r.p.m. Drum capacity 9800′ of ½″ line.

▶Winch units equipped with ball bearings throughout—Cooper special designed, patented, air cooled brakes, fully equalized—self energizing, with 34″ diameter drums.

▶Realizing that no one piece of equipment will economically do every pulling job, the complete line of Allis-Chalmers, high speed, winch tractors consists of three sizes of single drum units and two sizes of double drum units. Rotary or spudding equipment and telescoping mast are available for all winch units.

Low pressure tractor tires, standard equipment. Front tire size 7.50 x 18 or can be equipped with size 9.00 x 15 — 10 ply. Three sizes of rear tires are available, assuring proper operation in any type of country: 11.25 x 24, 12.75 x 24 and 13.50 x 24. Correct wishbone suspension of winch unit assures steady operation—vibration and sway are minimized.



New Peak in Crude Production

A NEW record in national production, the largest weekly increase in crude stocks and unfavorable gasoline-consuming weather were bringing demands the first of the week for reduced operations.

Long-range views continue optimistic, with many willing to hazard predictions of higher prices for crude oil and refinery products in the near future. At the same time it is conceded that recent developments as reflected by current statistical reports emphasize the need of minor curtailments at several points over the next few weeks.

Crude output averaging 3,462,352 barrels daily last week was 6,181 barrels daily above the previous peak in the week ending March 20. Kansas and Louisiana established new production records, the latter reaching a goal of 250,000 barrels daily announced a year ago. Oklahoma also stepped up its output so that it was 37,000 barrels more than the state allowable. It is claimed output will decline in all three states the last half of April.

A gain of 3,787,000 barrels in crude stocks for the week ending April 3 as reported by the government was disturbing to many. While part of this gain may be explained as due to month-end adjustments of stock figures by a few companies, it nevertheless indicates that an unhealthy condition exists. Since January 23, when crude stocks started to climb, a total of 12,163,000 barrels had been added to inventories up to April 3. Of this total 4,085,000 barrels was in East Texas, 5,688,000 barrels in Oklahoma and Kansas and 1,817,000 barrels in the Gulf Coast.

Some observers feel that the statistical reports in recent weeks indicate that any weakness in crude oil and refinery operations centers in Oklahoma and Kansas. In addition to the large increase in crude stocks, gasoline inventories at refineries in the two states and one refinery in Missouri are 1,825,000 barrels greater than they were a year ago. This is a gain of 23 per cent in gasoline stocks, which compares with an average of 12 per cent for the entire country.

CRUDE PRODUCTION *3,462,352 barrels daily average for past week—up 36,499.*

CRUDE STOCKS *297,374,000 barrels as of April 3—up 3,787,000 barrels.*

GASOLINE STOCKS *82,703,000 barrels as of April 17—up 124,000 barrels.*

REFINERY RUNS *3,055,000 barrels daily average past week—up 50,000 barrels.*

The suggested remedy is for producers and refiners generally not only to refrain from expanding operations during May but also make curtailments wherever they are needed. While the Bureau of Mines has not announced its May recommendations, it is assumed the government agency, due to its method of determining demand, will add to its April recommendation. Since state allowables and actual production have been running far ahead of recommendations it is urged that the higher May consumption be used to bring supply and demand in balance and thus stop adding to crude stocks.

There were an unusually large number of important field developments over the past week. Outstanding was the Trinity series discovery in the Opelika district of Henderson County in eastern Texas by Tide Water and Seaboard and the Ellenberger (Ordovician) discovery by Gulf in the Sand Hills pool of Crane County, Texas.

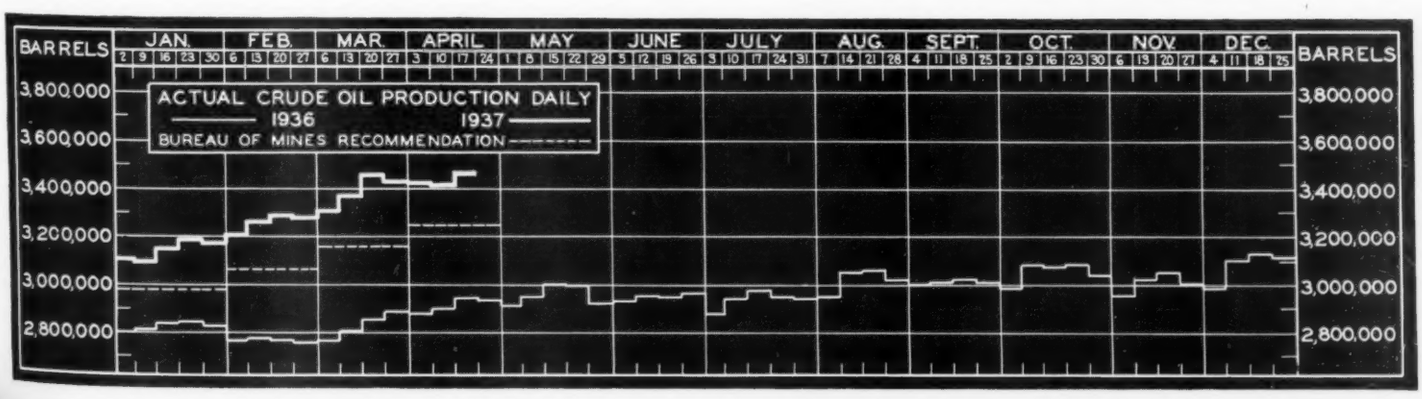
In refinery operations, gasoline tankcar markets were strong and higher prices were predicted in the Mid-Continent and Middle West.

The motor fuel market appears particularly tight at the Gulf Coast. A heavy demand there from coastwise and export buyers has brought about a situation in which refiners and terminal operators who usually have spot material to offer, are sold up for a period of 30 to 90 days.

Daily Production by States—Barrels

	Week ending Apr. 17	April state allowables	Bureau Mines April est.
Arkansas	27,540	.....	27,400
California	620,500	580,000	579,900
Eastern	114,100	.....	115,000
Kansas	192,575	190,300	183,000
Louisiana	250,590	235,675	244,800
Michigan	42,712	.....	30,600
New Mexico	106,980	160,400	91,400
Oklahoma	657,400	620,460	609,600
Rocky Mts.	74,030	.....	63,400
Texas	1,375,925	1,348,964	1,297,900
Total U. S.	3,462,352	.....	3,243,000

Oil production by fields shown on page 33.



SPARKS FROM THE NEWS

Continuance of Great Lakes and Texas centennial expositions in Cleveland and Dallas will be a factor in motor fuel demand this summer. Figures show consumption in Dallas and Fort Worth areas gained more than 30 per cent last summer.

J. Howard Pew told N.P.A. in Cleveland that average earnings on oil investments over past 15 years were much less than same investment in government bonds. This will be news to many, but not to long-time holders of numerous oil securities.

In light of recent Wagner act decisions the contentions of Chief Justice Hughes in 1926 when, as a private attorney, he represented the A.P.I. are of interest. Appearing before the Federal Oil Conservation Board he said: "It may be safely taken for granted that, under the power to regulate commerce, congress has no constitutional authority to control the mere production of petroleum on lands (other than Indian lands) within the territory of a state."

Recent reports show a healthier trend in refinery operations than in crude production. Refiners are leveling off gasoline stocks while crude inventories continue to climb.

Twenty-three cents out of every dollar taken in by the Standard of Indiana last year went to tax collectors. The taxes paid by this one company, aggregating $94,703,507, were approximately equal to the total collections of each of several countries, including Denmark, Greece and Norway.

A Trinity series discovery in eastern Texas and an Ordovician completion in the western part, serve to offset numerous wildcat failures in the Lone Star state in recent weeks. Important tests were also reported in Southwest Texas.

Interest in the Louisiana side of Rodessa centers in the possibilities of deeper Trinity pay where a saturated core points to commercial production.

General reaction to Governor Marland's threat of higher taxes if crude prices are not advanced is that it may postpone the increase which many believe was just around the corner. Crude schedules, it is contended, should not be buffeted around to meet the revenue needs of single oil state.

Oil workers listening to a C.I.O. speaker one night and an A.F.L. orator the next are losing sleep, but so far reports indicate most of them are hanging on to the money wanted as dues by the union organizers.

The plan of the federal government to spend $410,000,000 over next nine years in rural electrification means the retirement of millions of kerosene-burning lamps, lanterns, refrigerators, incubators and stoves.

One reason why cement has such a powerful position in road construction is that a manufacturer boosts his competitors' products when he cannot sell his own. This is in contrast to the attitude of too many road oil and asphalt manufacturers.

Tide Water Associated's annual statement last week presented the case for higher prices in this sentence: "It is hoped that there will be further improvement to compensate for the necessary increases in wages, the mounting costs of materials and supplies and the progressive burden of taxes."

SATISFIED WORKERS

Employes of large Gulf Coast refinery, 90 per cent of whom voted against C.I.O.

Road Program Points to Record Asphalt Year

By H. STANLEY NORMAN

NEW YORK, Apr. 20.—Allotment of $25,000,000 in federal aid funds to states for secondary or feeder highway construction during the fiscal year starting July 1, plans for an all-asphalt jetty project on the Florida Coast, and developments in production technique are among factors which probably will push asphalt consumption to a new record in 1937. This conclusion is indicated despite all-time record consumption in 1936 estimated at 5,514,950 tons, an increase of 29 per cent over 4,275,757 tons utilized in 1935. The figures are inclusive of asphalt manufactured from domestic and foreign crudes.

—U. S. Bureau Public Roads Photo

Economic surface for secondary roads

The federal aid appropriation of $25,000,000 for feeder highway construction available July 1 is in addition to $125,000,000 for regular federal-state road construction. Furthermore, federal aid funds will be augmented by $50,000,000 assigned to grade crossing elimination apportioned to the states without matching dollar for dollar.

The total federal highway air appropriation of $150,000,000 means double this amount will be actually spent, providing all states meet qualifications of the department of agriculture which administers the national funds. This program, together with previous balances, will make possible a total outlay for highway construction of $560,000,000 of which states must provide $230,000,000. In addition, work remaining unfinished on active contracts indicates a total highway and grade crossing elimination program reaching $800,000,000 during 1937. This program is contingent upon willingness of the states to meet their cooperative obligations.

In reviewing the 1937 construction program, Thomas H. MacDonald, chief, U. S. Bureau of Public Roads, points out that states, with a single exception, are in position to match the federal aid allotments, providing all funds are applied in this direction, but Mr. MacDonald observes that some states are diverting sufficient funds to match their federal allotments to unapproved construction projects. By including lateral or feeder highway construction in the program in which states may participate, it is thought diversion will be reduced to a minimum.

Approximately 75 per cent of asphalt consumption is in highway construction. Most of the states have not yet submitted their construction proposals under new appropriations. With greater gasoline consumption contributing to record tax collections and general improvement in tax receipts, it is probable full advantage will be taken by states of federal assistance.

Restriction of federal emergency expenditures, compared to outlays during 1935 and 1936, may be felt by highway material suppliers, but more liberal state programs may offset the lessened direct federal expenditures.

Conditions in the nation's highway construction appear to be shaping in favor of asphalt and competitive surfacing materials which fall within approximately the same cost bracket. For several years, approximately 35,000 miles of dirt roads have been paved annually. Even with this average there remain about 2,000,000 miles of dirt highway against about 1,000,000 miles paved with some sort of surfacing material. Statistics indicate a bulk of the paving has been done on the primary highways where expense was not necessarily a cardinal factor in selecting a material, but durability and maintenance expense.

With secondary highways receiving increasing attention and with improvement in products and application made possible by experience and research, asphalt producers contend the field of competition is being gradually reduced.

So-called "soil stabilization" offers probably the greatest potential market for asphalt. Soil stabilization has developed into a major practice by most of the state highway departments as a forerunner to permanent pavement. It is estimated asphalt producers could double their business if they were able to take exclusive command of the soil stabilization business. Stabilization of soil roads actually consists of applying water repellant substances which have a tendency to make permanent earlier grading work and preserve it as satisfactory base for future paving, irrespective of what material may be ultimately selected.

Stands up under heavy traffic on Fifth Avenue, New York

Research Needed

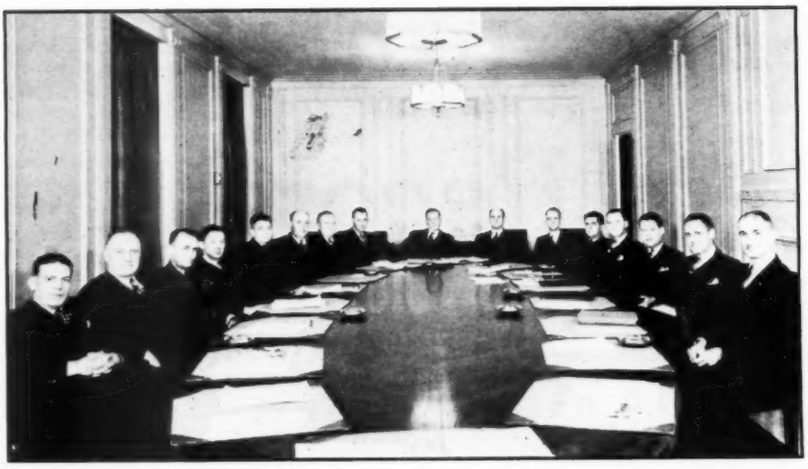
Wide variations of soil texture and problems presented by consistency have given material suppliers considerable worry. In this respect, it is contended lack of funds for adequate research is handicapping the asphalt industry. Reluctance of oil companies to appropriate larger sums for asphalt research probably is understandable in that this residue product represents only about 2.5 per cent of volume and value from crude petroleum. There is a growing tendency, however, to devote more attention to production of asphalts to meet requirements and conditions of application demanded by consumers.

Generally speaking, soil stabilization has been divided into two major groups subject to almost as many variations as there are types of soil. Sub-oiling is generally practiced on clays and more compact soils, by application of liquid asphalt to the base of scarified earth capillary action being

Protective asphalt mattress on Mississippi levee

depended upon to diffuse the material upward to the surface.

In sandy soil, stabilization with asphalt is accomplished by the road-mix method using multiple blade graders and other conventional methods. The value of soil stabilization rests in the ideal base it provides for future paving, a consideration of primary importance regardless of what material is ultimately selected. Approximately 75 per cent of the asphalt pavement failures are held chargeable to inadequate base rather than to material, mix or application. Varying types of soil require individual consideration. Until practical experience by trial and error or adequate research have solved the problems presented asphalt producers probably will be forced to compete largely with salesmanship for the business.



Asphalt division salesmen of Shell Oil Co.

On the basis of practical application and satisfactory results, the field of asphalt consumption offering greatest immediate expansion possibilities is in harbor and river bank protection. Successful completion of the jetty cementing job at the entrance to the Galveston Channel using asphaltic concrete has caused the U. S. Corps of Engineers to project similar work at other points on the coast. Being impervious to ingredients in salt water and proved capable of withstanding action of tides and waves, asphalt's uses in permanizing jetties and in reducing maintenance costs appear definitely headed to new heights. Work will be started shortly at St. Andrews Bay, Fla., by U. S. engineers in building an all-asphalt jetty. The Florida project will be much more extensive than the experimental work completed late in 1936 at Galveston which consisted of sealing and repairing a rubble jetty.

While production of asphalt remains strictly in the by-product category of petroleum refiners, research appears to be one of the fundamental needs of the industry. The chief trouble at present rests in the fact no simple tests exist which adequately reflect the service qualities, irrespective of the source and methods of production.

Although experiments are not sufficiently advanced to reveal full importance, preliminary research work has indicated asphaltic material recovered from lubricating stock by solvent extraction may contribute to future manufacture of asphalt. The asphaltic materials remaining in lubricating stocks under distillation methods of finishing, but now recoverable by solvent extraction, may contribute to the adhesive and ductility qualities of asphalt. In other words, the solvent refining process may remove the ingredients which were detrimental to lubricating oil and make available a heretofore missing quality of asphalt. Experiments to determine whether solvent extracted asphaltic material is important to asphalt for paving and other modern uses are now under way. Those conducting the experiments are unprepared to say whether the development will contribute anything constructive to asphalt manufacturing, but hold it is possible. Hardly without exception, major asphalt manufacturers are now using vacuum distillation methods in production. Refiners using the older methods are rapidly turning to vacuum distillation equipment for the dual purpose of increasing quality and quantity and for the general adaptability to other refining requirements.

A large part of asphalt now used in paving and other construction is prepared in plants where control of the mix can be regulated more accurately. In several past failures, a study of conditions has indicated that uncontrollable mistakes in road mixing of aggregate with asphalt were responsible. Frequently the fault seems to rest in inability to reduce the aggregate material to adequate minuteness.

A recent development in road-mix equipment, which includes a "pug mill" reduces the aggregate material to predetermined maximum sizes before blending with fines and asphalt. The "walking pug mill" also spreads the mixed paving material, covering a 10-foot strip and permits rolling immediately.

While demand for asphalt has increased over its previous record in 1929, the value to producers has not responded along similar lines. In 1928, for example, the 4,005,529 tons marketed produced value of $52,117,078, or $13.01 per ton. The value for 1936 has not yet been announced, but the value for 1935 was $39,897,634, an average of $9.97 per ton. The average price probably showed increase in 1936, but it was slight.

Record Attendance Assured at W.P.R.A. Annual Meeting

Advance reservations for the twenty-fifth annual meeting of the Western Petroleum Refiners Association in Hot Springs, Ark., April 26, 27 and 28 indicate the largest attendance in the quarter-century history of the association, A. V. Bourque, secretary-treasurer has announced.

Carl E. Bailey, governor of Arkansas, has accepted an invitation to address the meeting.

A feature of the meeting will be the birthday party Tuesday night. The program for the three days follows:

Monday, April 26, 10:30 a.m. Committee Meetings.

1:15 p.m. Technical Session, Emby Kaye, Skelly Oil Co., chairman.

Dehydration and Desalting: "Electrical Process," by G. B. Hanson, Petroleum Rectifying Co.; "Chemical Process," by E. R. Jones, Skelly Oil Co.

Reforming: "The Economics of Reforming and Leading Mid-Continent Gasoline," by Wright W. Gary, M. W. Kellogg Co.; "The Application of Reforming to the Individual Refiner," by L. D. Mann, Empire Oil & Refining Co.

Tuesday, April 27, 9:30 a.m. Technical Session. R. B. Pierce, Arkansas Fuel Oil Co., chairman.

Gasoline Treating: "Economics of Treating and Inhibiting (Gum)" by Dr. P. S. Nisson and W. R. Ross, Pure Oil Co.

Gasoline Sweetening: "Introduction of Methods and Discussion of Doctor Treating," by Dr. C. W. Rippie, Solvay Sales Corp.; "Lead Sulfide Process," by D. B. Nutt, Standard Oil Co. of California and J. A. Altshuler, Stratford Engineering Corp.; "Copper Chloride Process and Review of Other Methods," by Dr. C. W. Ripple, Solvay Sales Corp.

General Session, 12:30 p.m. Luncheon. H. T. Ashton, Socony-Vacuum Oil Co. (lubrite division), chairman.

Address of Welcome by Carl E. Bailey, Governor of Arkansas. Introduction by Col. T. H. Barton, Lion Oil Refining Co.

"Twenty-five Years of Service," by C. M. Boggs, Kanotex Refining Co. president, Western Petroleum Refiners Association.

"Recent Federal Legislation, Enacted and Proposed, Affecting Business Practices," by Fayette B. Dow, Washington counsel.

Tuesday evening, April 27, 8:00 p.m. The Birthday Party, (informal). R. W. McDowell, Mid-Continent Petroleum Corp., master of ceremonies.

"Luck: Its Care and Feeding," by Tom Collins.

"Happy Birthday," H. T. Ashton.

Wednesday, April 28, 9:30 a.m. General Session. Roy B. Jones, Panhandle Refining Co., chairman.

"The Anti-Trust Laws, Opportunities and Responsibilities of Trade Associations," by Ralph Horween, Chicago.

"Wildcat Marketing in a Merchandising Age," by H. Merle Smith, Chicago.

"Hold On," by Charles T. Evans, Little Rock.

Report of Nominating Committee; Election of Officers and Directors.

2:00 p.m. Meeting of nonintegrated refiners to discuss proposed sales agency.

The program committee is R. W. McDowell, chairman; T. H. Barton, Roy B. Jones, T. A. Helling and Emby Kaye.

A.A.P.G. 1938 Meeting

The executive committee of the American Association of Petroleum Geologists has selected New Orleans, La., for the twenty-third annual meeting in March, 1938. Invitation extended by the city of New Orleans has been accepted and endorsed by the Shreveport Geological Society and the South Louisiana Geological Society.

The A.A.P.G. has two affiliated societies in Louisiana and the officers of the Shreveport Geological Society are Shapleigh G. Gray, Texas Co., president; H. K. Shearer, Hunter Co., Inc., vice president, and C. R. McKnight, Arkansas Fuel & Oil Co., secretary-treasurer.

Ellenberger Rewards Persistent Search

By L. E. BREDBERG

FORT WORTH, Tex., Apr. 19.—Gulf Oil Corp.'s persevering pursuit for deep (Ordovician) production in West Texas has been finally rewarded with a new Ellenberger discovery in the Sand Hills field in western Crane County, following a search of over four years since the company began its first deep test in the McElroy pool, just over the Crane County line, in western Upton County. That test was drilled to 12,786 feet, the deepest test in the world, but failed to make a commercial producer from the deeper horizons, although it had good showings of oil at various depths. It was plugged back to the regular McElroy pay and made a Permian lime producer.

The next try by the company for deep production was in the Sand Hills field across in Crane County, and on the western side. This test topped the Simpson sand at minus 3,325 feet (6,060 feet), the Ellenberger lime at minus 4,090 feet, and was completed as a producer in the Simpson, striking sulfur water when drilled to 6,450 feet in the Ellenberger. It was plugged back to 6,317 feet to shut off the water, was given a 440-quart shot from 6,185-6,300 feet and 140 quarts from 5,979-6,050 feet, making only 123 bbls. per day on the pump from the Simpson sand. Gravity of the oil was 34.7 degrees, whereas the gravity of the oil in the new Ellenberger strike is 45 degrees. The first deep test was completed the middle of February, 1936.

Previous Tests

The second try for deep production in this field, No. 2 Waddell and others, in section 18, Block B-21, about 1½ miles northeast of the Simpson discovery, which was in the NW cor of section 4, Block B-27, also made but a small well in the Simpson, producing from sand logged at 6,152-86 feet. No. 3, in section 21, Block B-21, about 3 miles east of the Simpson discovery, is drilling for Permian production, but may be carried to the Ellenberger since this new discovery.

No. 4 W. N. Waddell and others, the Ellenberger discovery, is about one-half mile southeast of the Simpson discovery, in section 4, Block B-27. It topped the Middle Ordovician at 5,830 feet and the Ellenberger at 6,004 feet as nearly as can be determined at this time, the well starting to flow while coring between 5,994 and 6,014 feet, total depth. This Ellenberger top is 311 feet higher than the Ellenberger top in No. 1, to the northwest, which shows a steep dipping on the western flank of the structure. No. 1 struck water instead of oil in the Ellenberger, as did No. 2. That well showed water in the Ellenberger from 6,507-6,709 feet and was plugged back to 6,186 feet, making 25 bbls. per day on the pump from the Simpson sand above the Ellenberger. The structure between the first two wells appears practically flat, with the Simpson thinning to the southeast toward No. 4, the Ellenberger discovery.

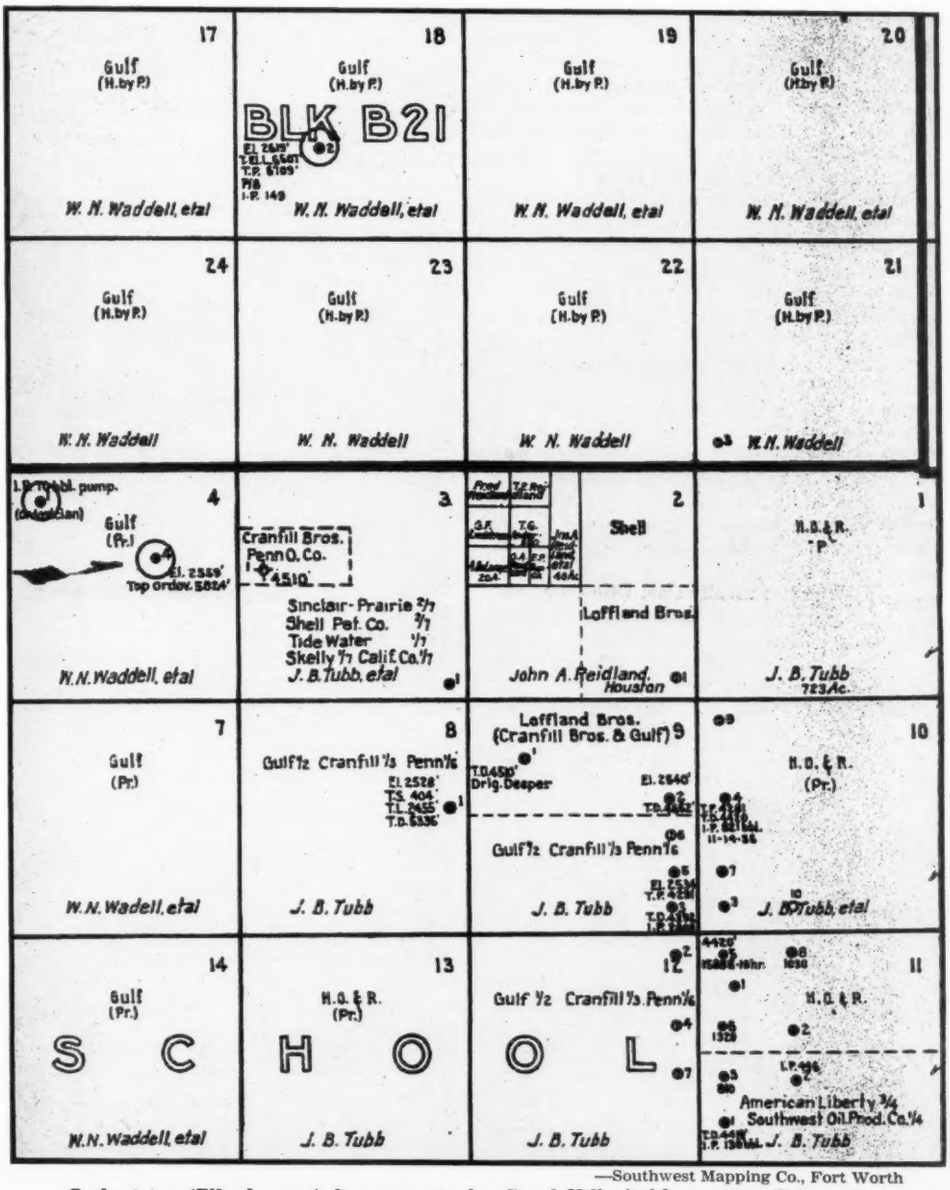
At 5,989 feet, 2½-inch tubing was run in No. 4, with perforations on bottom. It was circulated with fresh water one and one-quarter hours, starting to flow by heads on April 11, flowing 82 bbls. in 19½ hours. At 6,000 feet the oil began increasing, oil then being circulated in deepening to 6,014 feet, where it was shut down for storage and testing. It flowed 75 bbls. per hour, later making 283 bbls. in three hours' time. The gas volume at 6,014 feet, total depth, gauged 2,870,000 feet per day, the oil testing 47.6 at 90°, or 45 degrees corrected. It had practically no sulfur content and was light green in color.

Drilling Time

This well was started on February 5, 1937, drilling to 5,989 feet in 61 days, exceptionally good time considering the hard formation encountered in this area. Seven-inch casing was set at 5,800 feet, with 10¾-inch set at 1,413 feet, and a 9-inch hole reamed to 5,800 feet, then reduced to 6¼-inch. A rotary rig was used, whereas the former two deep tests were drilled with cable tools. Part of the rig used in drilling the 12,786-foot hole in the McElroy field was also used, and George McElveen, who was a driller on that deep test, was tool-pusher on this new discovery, part of the crew on No. 103 also helping.

Elliott Powers, geologist for the company, did the geological work and correlated samples, whereas B. G. Martin, geologist, did the same work on No. 103 McElroy.

Gulf Oil Corp. has a block of 42,000 acres (nearly solid) to the southwest, west, north and northeast covering the vast Waddell ranch, also holding other leases to the south and southeast on the J. B. Tubb and Waddell ranch, although the section to the east of this discovery, section 3, is held by Sinclair Prairie Oil Co., Shell Petroleum Corp., Tide Water Associated, Skelly Oil Co. and Standard Oil Co. of Texas. A dry hole drilled in the northwest quarter by Cranfill Brothers and Penn Oil Co. went to only 4,500 feet. A Permian lime producer is located in the southeast corner.



—Southwest Mapping Co., Fort Worth

Ordovician (Ellenberger) discovery in the Sand Hills field, western Crane County

Management-Labor Harmony Is Before N. P. A. Convention in

By J. P. O'DONNELL

CLEVELAND, Ohio, Apr. 16.—The National Petroleum Association's policy of providing a varied program and able speakers for its meetings was exemplified at the thirty-fourth semiannual convention which concluded its two-day session here today with the record attendance of 278 men from affiliated companies. Discussion ranged from technical problems of the industry to international relations and petroleum's role in them; from management and labor to traffic and transportation.

Speaking on "Management and Labor in 1937," Whiting Williams, Cleveland industrial consultant, said that management-labor harmony is dependent on management's attitude toward that 60 per cent of labor that represents neither the procompany nor the prounion but the projob element.

This 60 per cent, he said, regards affiliation with the union and loyalty to the company as job insurance and will veer from one to the other with little persuasion. Its attitude is usually determined by which, the company or the union, provides it with the best service.

In this respect, he continued, unions are handicapped by the inexperience and low calibre of the local leaders, by use of the sit-down strike which has proved to be a boomerang and by the cycle of business which is now providing an opportunity for management to do more for labor than the unions can.

"Wise management," Mr. Williams stated, "looks to this as a period of revision and correction of dealings with the 60 per cent."

He pointed out that the unions find rendering of service to that necessary but variable majority more difficult in good times than in bad and advised management to direct its efforts toward a better mutual understanding with the projob group, "to pay more attention to the 60 per cent than to the leader."

Labor difficulties usually start with individual grievances which can be obviated, he said, but which are amplified by local leaders into demands of consequence. To avoid these grievances he urged that management develop a closer contact with labor, study and correct the employe's small grievances and "make him happy, for unhappiness breeds radicalism."

Legislation is not necessary to develop management-labor harmony or to bridge the wide gap, as pictured by labor leaders, between the two, he concluded, but rather contact, cooperation and mutual understanding.

Countries Lacking Oil

"Countries straining against the barriers of international restraint, Germany, Italy and Japan, have no oil. They do not want colonies but raw materials," Prof. Henry M. Busch of Western Reserve University, Cleveland, said.

He describes the militaristic attitude of these three countries and pointed out how their dreams of conquest are not based on a desire for colonization but on acquiring and exploiting natural resources. Wars are generally industrial and commercial, not politicial, he said, holding that some system should be worked out whereby every nation can be guaranteed an equitable share of raw materials.

Discussing the United States' position with regard to international conflict, he said that this country does not want war if it can avoid it and advocated a broader neutrality law that would stop shipments to combatants not only of war implements but of raw materials. Pointing out that "nobody can fight a war without oil," he said that the United States controls 60 per cent of the world supply, Russia 11 per cent and Great Britain and the Netherlands practically all the rest.

Business must resist the possibilities of big profits that come from war, one of the possible effects of which, he predicts, is nationalization of all industry. The breakdown of the economic structure during war would invite nationalization, he said.

Role of Compact

The interstate oil compact was described as "purely and solely a waste prevention agreement," by Col. E. O. Thompson, chairman of the compact commission, in a discussion of its importance to the oil industry in the eastern territory.

"If the industry does not follow the course of adopting the best rule of production, once it is known and fully demonstrated, then you can not expect to avoid the heavy hand of complete statutory compulsion. Public interest will demand it." Mr. Thompson described at length the beneficial effects of proration in Texas and to the entire industry and nation.

In favoring state control over federal control, he explained that "our country is too large to have its affairs directed by a single government. Public service at such a distance must, from the circumstance of distance alone, be unable to administer the details necessary for good government. The way to have a good government and a safe government is not to entrust it all to one but to divide it among many."

Gasoline Advertising

Questioning the believability of oil and gasoline advertising, John Benson, president of the American Association of Advertising Agencies, said, "the weakness about these various claims lies in their confusing the reader and in their discounting and contradicting one another."

The need for higher standards of advertising in the oil industry is regarded as urgent by Mr. Benson, who said, "Your industry is undergoing drastic changes in distribution, losing some of its control over stations, and hence is dependent more than ever upon consumers. Anything you do to build up that faith is worth doing. You can not afford to lose it.

"The human factor is bound to play a decisive role in future marketing. A friendly feeling for a brand name will be the distinguishing factor rather than upon emphasis upon processes of refining," he concluded.

Dealer Marketing Plan

Bringing with it an end to "guaranteed margins, the loaning and giving of free equipment, special deals and inducements, preferred accounts and a host of other evils," the dealer marketing plan has justified itself according to Wilmer R. Schuh, president of the National Association of Petroleum Retailers.

"Three years ago it was difficult to find an area where no price war existed. Today it is dif-

Analyzed Cleveland

ficult to find an area where a price war exists. The dealer marketing plan, which puts the burden of price maintenance and profitable marketing squarely on the shoulders of the retailer whose existence depends on them, should eventually spell the doom of those economic leeches with which this industry has been infested, the chiselers who want a special price so they can undersell their competitor to the detriment of labor and over 90 per cent of the industry."

Ellsworth C. Alvord, of Washington, D. C., discussed federal revenue legislation, the undistributed profits tax and the taxation of capital gains. After telling of the increasing deficit of the federal government, he said that it has three alternatives of meeting these obligations: Taxation, repudiation or confiscation.

Mr. Alvord pointed out the inequalities of the undistributed profits tax and the taxation of capital gains and said that nothing would be done regarding them or other similar tax measures unless agitation is started not in Washington but around the country.

H. C. Mougey, chief chemist, research laboratories section, General Motors Corp., spoke on "Recent Problems in Lubrication" at the lubricating oils conference during which most of the discussion centered on the lubrication of hypoid gears.

Mr. Mougey said that the load carrying ability of the hypoid lubricant depends on the amount and activity of its sulfur content. He remarked that the response of the oil industry to the problem of supplying this type of lubricant has been highly and surprisingly successful.

H. H. Kelly, chief of the section of safety, Bureau of Motor Carriers, Interstate Commerce Commission, outlined the new motor carrier safety regulations, applicable to interstate common and contract carriers but not to private carriers at the traffic and transportation group meeting.

Of the four parts, one, reporting accidents, is now in effect and the others become effective July 1, he said. They are simple driving rules, requirements for parts and accessories necessary for safe operation and a set of qualifications for drivers.

Thirty-eight states have accepted these regulations, Mr. Kelly said, adding that it is the first chance for national uniformity on basic safety elements.

At the meeting of the executive committee of the fire and safety marshals, Bradford was chosen for the 1937 annual meeting on June 16 and 17. A tentative program was arranged including the customary first aid contest for the association plaque.

Pamphlets, "What Price Gasoline," by J. Howard Pew, president of the Sun Oil Co., and "The Value to the Public of the Oil Industry as a Free Enterprise," by Fayette B. Dow, general counsel, National Petroleum Association, were distributed in lieu of talks.

Mr. Pew's paper reviewed the reduction in cost and increase in efficiency of the industry's products and contended, "In view of the record of service and efficiency which I have sketched, I submit that the petroleum industry has earned and deserves a breathing spell of exemption from legislative interference and taxation increases."

Mr. Dow's paper concluded with the statement, "If the broad public interest is the proper and ultimate test of a business that is important to the welfare of the American public, then I submit that the achievements of the oil industry abundantly justify its status as an essentially free enterprise."

Both Mr. Pew and Mr. Dow took cognizance of the current desires of several states to make the oil industry a public utility.

Marine Oil Production

A bill to prevent further production of petroleum from lands underlying the coastal waters of the United States has been introduced by Senator Gerald P. Nye of North Dakota. The bill, S. 2164, would provide that all submerged lands lying under the high seas off the coasts of the continental United States between the low-water mark and the 3-mile limit are declared to be a part of the public domain and potential naval reserves.

Lisbon Field Most Important in Louisiana Since Rodessa

By MITCHELL TUCKER

SHREVEPORT, La.—After the completion of four oil producers, having an aggregate production of about 1,800 bbls. daily, and the present drilling of 20 additional wells, the Lisbon field of Claiborne Parish, Louisiana, is now regarded the most important oil discovery in the North Louisiana territory since the Rodessa field about two years ago. Indicated reserves of 34.5-gravity oil from semiproven acreage at Lisbon is now estimated at possibly 25,000,000 bbls. The Lisbon discovery is also quite important due to the wildcatting which it has stimulated on other promising structures nearby.

A most interesting history surrounds the original geological work, promoting, and drilling of the discovery well at Lisbon, which embodied all the difficulties and hardships experienced in many other of the country's important discoveries. In 1919, H. D. Easton, then connected with a geological firm of Tulsa, and now a consultant and independent operator of Shreveport, La., discovered, mapped and named two structures about 10 miles apart in the extreme southeast corner of Claiborne Parish, one of which he called Sugar Creek and the other Lisbon.

Shallow wells were drilled on each with negative results. Later Triangle Drilling Co. of Shreveport drilled No. 1 Kirkpatrick to 4,338 feet and opened Sugar Creek gas field in an Upper Glen Rose lime member. To date 12 wells have been completed here having an aggregate accumulated production of over 20,000,000,000 feet. Just recently this same company and associates opened the northern flank of Sugar Creek gas field to oil production in section 1-19-6, in an upper lime member of the Travis Peak, total depth 5,743 feet.

United Gas Public Service Co. acquired extensive gas rights throughout the Lisbon structure and drilled the first deep test in 1934, known as No. 1 Meadows in section 13-21-5w, to a total depth of 6,170 feet. Hole was drilled with rotary and apparently the Lower Glen Rose oil horizons were passed without noting saturation. Soon after abandoning this hole, seepages of oil were noted at the casinghead, which have continued for three years. During recent months this abandoned well has been making about 5 bbls. daily, and farmers have been impounding it and selling it locally.

After assembling the extensive block surrounding the discovery well, E. T. Oakes employed Geophysical Petroleum Surveys Co. to map the entire area by seismograph.

Encouraged by the oil seepages from United's deep Lisbon test, and also by Mr. Easton's continued faith in oil possibilities there and indications obtained from seismograph Mr. Oakes and associates of Homer and Shreveport drilled No. 1 W. H. Patton and opened the field. After encountering many setbacks, including having original derrick blown down before drilling started, and abandonment of first hole at 4,232 feet following impossible fishing job, Mr. Oakes and associates brought in No. 1. W. H. Patton Estate, NE cor. section 1-20-5w, on Christmas Day, 1936, flowing about 200 bbls. daily. Production is from the basal Lower Glen Rose, generally referred to as the Pettit lime, a highly porous coquina formation. Although later drilling has indicated the initial well was improperly completed to permit full production, the 200-bbl. per day rate has been well sustained, and accumulated recovery to date has been set at about 20,000 bbls. Very little gas is associated with the oil.

Immediately thereafter, four additional wells were begun to further prove the field. Ray P. Oden and others made the second completion in No. 1 W. H. Patton SW SE SE section 36-21-5w, which flowed 487 bbls. in 24 hours on initial test through seven-sixteenths inch and three-quarters inch tubing choke, tubing pressure 75 pounds, casing pressure 400 pounds, total depth 5,373 feet. Lyons and Neely immediately followed by completing No. 1 H. E. Patton, NE NW SW section 36-21-5w, flowing 450 bbls. initially through 1-inch tubing choke, saturation 5,274-84 feet, tubing pressure 50 pounds, casing pressure 325 pounds, total depth 5,292 feet. Next, P. W. Woodruff and others completed No. 1 H. E. Patton, S half SW NE section 36-21-5w, flowing 30 to 40 bbls. hourly.

Lisbon Oil Co. No. 1 J. W. Burgess, NE SE NE section 3-20-5w, 2¼ miles west and considerably down dip, found the Pettit lime dry and is now exploring in the Travis Peak, topped at 5,406 feet. Showings of oil were reported from 5,428-33 feet and 5,437-44 feet, and well continues to test. These porous members of the underlying Travis Peak have not been penetrated by other Lisbon wells higher on structure, and the lower showings may indicate intangible reserves below present producing level.

Immediately following the completion of these three producers, 18 locations were staked by Gulf Refining Co. and independents on surrounding acreage, all now either rigging up or drilling. Stimulated by this activity, several additional locations are expected in all directions. Due to the fact considerable acreage was sold from the block while drilling the discovery well, much of the close Lisbon acreage is held independently. Standard and Magnolia are the next majors expected to enter. Several large sale or lease exchange transactions are reported in the negotiating stage.

A core analysis was made from sample of the Pettit material taken from the Oakes discovery well by the U. S. Geological Survey, which indicated that as a whole the Pettit consists of calcite, largely of Oolitic and microfossil structures, with interstitial crystallized calcite. Such limestones, composed of fragments of calcareous hard parts of organisms such as shells, corals, and worm tubes are called "coquina" and are apt to be good reservoirs provided the interspaces between the particles have not been filled with finer sediments, or with precipitated calcium carbonate, or the rock has not been too severely metamorphosed. A good effective porosity, from 17 to 22 per cent, is indicated in physical tests of Pettit lime cores.

The Lisbon structure appears from both surface and geological mapping to be a broad flat anticlinal dome, extending over possibly 20 square miles. Regionally it is about 150 feet higher than the anticlinal Sugar Creek structure about 10 miles to the southwest. The very recent establishment of oil production on the northern flank of Sugar Creek has been cause for speculation as to whether there is any interconnection between the two reservoirs. Such a condition in the Glen Rose beds is discounted because of absence of gas in the Lisbon structure 150 feet higher regionally than Sugar Creek. However, the shows of oil in the upper lime members of the Travis Peak on the Lisbon flank, and the definite discovery of oil in the same zone on the northern flank of Sugar Creek may be significant.

H. D. EASTON

H. D. Easton, consultant and independent operator of Shreveport, La., who was associated with E. T. Oakes in the discovery at Lisbon. A graduate mining engineer from Pennsylvania State College, he had extensive experience in the mining areas of Kentucky, Illinois and Indiana, where he served as superintendent of several coal mines. For seven years he was professor of mining engineering at the University of Kentucky. He also served on the Kentucky Geological Survey, and did considerable work on the research of ceramic clays.

—Grabil.

INITIAL TEST—E. T. Oakes, codiscoverer of Lisbon field, directing flow of oil into pits

Informed geologists freely predict possibility of a connection between the fields in the lower horizons, known to be productive by the 8,616-foot test drilled by Sugar Creek Syndicate last summer in the SW of section 31-20-5w, known as No. 2 Durrett, which logged prolific wet gas saturation in the Travis Peak at approximately 5,500, 7,600, 8,100 and 8,400 feet. This test was in the same township and range as the discovery oil well at Lisbon, and lends weight to intangible deeper reserves there.

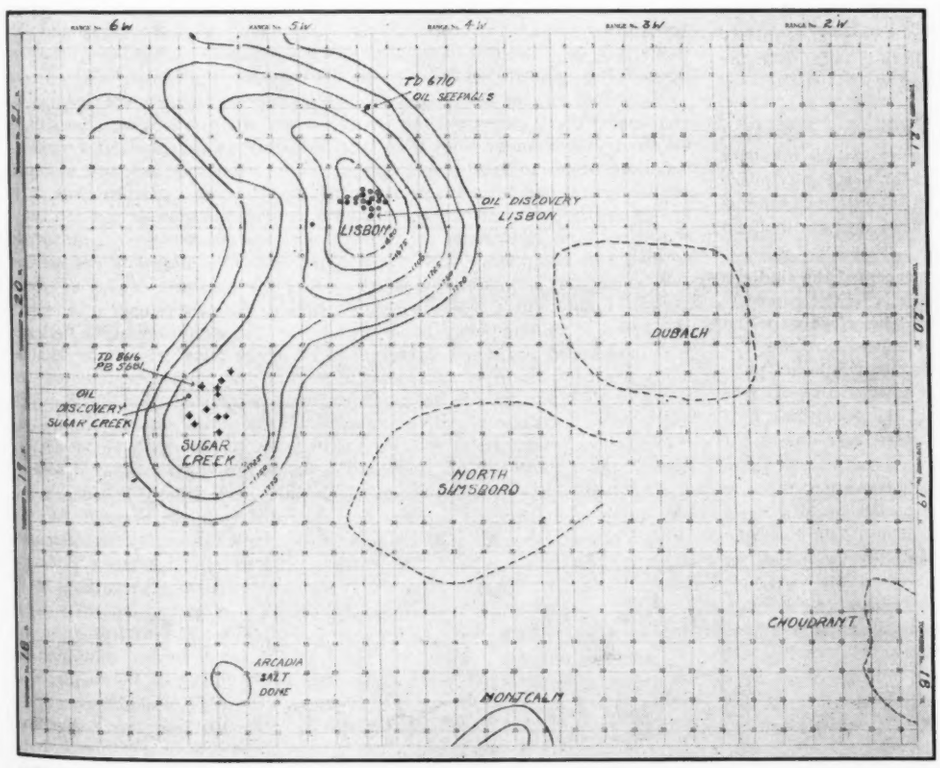
Hence, the quite recent discovery of oil at Lisbon and Sugar Creek in the Lower Glen Rose and Travis Peak, and the indication of prolific production in the lower beds, have established justification for the very active leasing, mapping, and wildcatting campaign now under way in this general region. About 10 miles east of Lisbon, A. C. Glassell of Shreveport is preparing for a deep test upon his geophysically mapped Dubach structure. About 10 miles south, the North Simsboro structure has recently been blocked and plans call for a 6,000-foot test here soon. The proven Montcalm gas structure about 6 miles south of North Simsboro was opened last summer by Marr-Lide & Greer No. 1 Gardner, section 10-17-4w, which tested 67,634,000 feet of gas at 2,600 pounds rock pressure, total depth 6,567 feet. About 8 miles east of Ruston, materials are being moved in for a Travis Peak test of the Choudrant structure. About 18 miles north of Lisbon, Lion Oil Refining Co. only last week discovered the new Schuler field of Upton County, Arkansas, producing from a Travis Peak member at the peak rate of 60 bbls. per hour.

Lisbon Reserves

Contour mapping of the Lisbon anticlinal structure on top of the Nacatoch sand points out a rather broad dome, comprising about 20 square miles. Considering only that portion indicated within 50 feet of closure, as much as 8 square miles of productive area may be regarded as semi-proven. The extent of this producing area is further borne out by the fact that United No. 1 Meadows well 3 miles north of production is still producing through seepage outlets after three years.

Sand thickness of the present producing area ranges from 10 to 15 feet, porosity 18 to 23 per cent, fully saturated. From such a sand body under 10-acre spacing, 5,000 bbls. per acre is regarded as conservative. Consistency of production is indicated by the fact the Oakes discovery well has produced approximately 20,000 bbls. to date with practically no potential decline.

Granting an 8-square-mile productive area or 5,280 acres, a yield of 5,000 bbls. per acre points to an ultimate recovery of 26,400,000 bbls. Conservative estimate of semiproven production as Lisbon, considering all the territory productive within a 50-foot closure on top of the Nacatoch, is now placed at 25,000,000 bbls. Several estimates of ultimate recovery made by groups planning substantial investments in Lisbon considerably exceed this figure.



ACTIVE AREA—Regional map of Lisbon-Sugar Creek area, showing nearby structures which are to get deep tests soon. Lisbon contours are on top of Nacatosh sand, interval 25 feet

Lisbon Drilling

Drilling at Lisbon will present no problems other than those encountered in all deep North Louisiana drilling. With few exceptions, drilling is quite similar to Rodessa digging. In fact, most of the Lisbon rigs have been moved direct from Rodessa.

A rather heavy fresh water zone is penetrated from 400 to 600 feet, and this requires that the surface casing, usually 10¾-inch, be set below this point. The oil string, 7-inch O.D., is set on top of the saturated lime. The massive anhydrite is encountered about 1,200 feet higher at Lisbon than Rodessa, and this results in harder drilling with some earlier reconditioning of mud. However, due to the absence of gas pressure in the Lower Glen Rose zones at Lisbon, mud does not have to be of such a high gel strength or consistency, resulting in a much easier mud problem. From 15 to 20 rock bits are required per well. Drilling time will not exceed 30 days from time of rigging up to date of completion.

Although the low flowing pressures at Lisbon may indicate a rather short flowing life, it presents every indication of an easy pumping field. The high degree of porosity and oil sand content points to a favorable and persistent fluid level, all conducive to easy pumping of large volumes.

Washington Speculation About Effect of Wagner Decision

By HENRY D. RALPH

WASHINGTON, D. C., Apr. 19.—The scope of the national labor relations (Wagner) act and the extent to which the recent Supreme Court decision will broaden the power of congress to regulate industry are the most absorbing topics of conversation in Washington this week. Questions most frequently asked are what business activities are covered by the collective bargaining requirements of the Wagner act and whether or not the decisions open the way for federal regulation of wages, hours, and control of production in industry. The consensus on the first question is that the Wagner act ultimately will probably be extended to a very wide variety of business operations, but as to the second question there is nothing in the Supreme Court opinion to support the view that the court would countenance a revival of anything like the NRA.

In spite of the fact a majority of the court said the Wagner act could not be upheld if it were intended to apply to all business operations, the minority observed that under the doctrines laid down in the decision practically every aspect of business can be held to have some bearing on interstate commerce and so brought within the scope of the act, and most attorneys are inclined to agree with the minority on this point.

In each of the three manufacturing cases the court accepted the findings of the National Labor Relations Board that the operations of the company involved were such that a strike of its employes would interfere with the flow of interstate commerce. This means that in each subsequent case the board must make a similar finding of facts, but in view of the broad principles accepted by the court this should not be difficult as to the majority of industrial operations. In the three cases the court laid down a number of yardsticks for determining whether a company's industrial relations might have an effect on commerce.

One of these yardsticks is the size and extent of the corporation standing alone. A corporation which does business on a national scale or in a large number of states or which accounts for a substantial portion of the business of its industry is apparently subject to the Wagner act in all of its operations on the theory that a strike of any of its employes might stop the rest of its operations and affect employes in other states or stop a substantial amount of interstate commerce. Under this yardstick the Wagner act apparently applies to all operations of a major integrated oil company, from production of crude petroleum to retail sales at its own filling station.

Another yardstick is the source of materials and destination of the products of a company. A manufacturer is subject to the act even though all his business is done within a single state if substantially all his raw materials come from other states and the bulk of his products are sold outside his state. The exact percentage which will be the criterion has not been determined, but attorneys think a manufacturer who obtains at least 50 per cent of his materials and sells at least 50 per cent of his products interstate is subject to the act and they would not be much surprised if the board would find a considerably smaller percentage of interstate business would subject a manufacturer to the law.

A third yardstick is the relation of an individual employer to the balance of his industry looked at from the national view. An independent unit in an important national industry, such as petroleum, could be held subject to the act if it could be shown a strike in its plant might have some effect in slowing down the operations of other units of the industry in other states, and particularly if the employes of such a plant are affiliated with a labor organization having membership in plants of the industry in other states.

The majority of the court held that purely local businesses cannot be reached by the Wagner act, but it is apparent much more litigation will be required to determine what these are. Probably an independent petroleum producer or an independent gasoline retailer would be exempt, although similar operations by a major company would come under the law. This brings up the problem of discrimination between interstate and intrastate commerce, and if it could be shown interstate commerce was materially burdened by compliance with the Wagner act while intrastate competitors were exempt, it is possible the court would hold intrastate employers would have to comply with the law to remove this discrimination against interstate commerce. A similar policy under which the Interstate Commerce Commission fixes freight rates on intrastate rail shipments to prevent discrimination against interstate commerce has been upheld by the Supreme Court, and in one of his Wagner act decisions Chief Justice Hughes used language which implied that the same principle might be used in enforcing the Wagner act.

Whether or not there is legal justification for it, the Wagner act decisions have certainly given a great impetus to proposals roughly described as a revival of the NRA. The decisions have undoubtedly broadened the conception of the interstate commerce powers of congress as applied to the "stream of commerce," the theory on which the new deal attorneys attempted to justify NRA and AAA. But the Wagner act was upheld because the court declared experience has shown that the lack of collective bargaining leads to labor disputes which reduce the volume of commerce. This may be a tenuous connection, but it would appear to be much more difficult to prove that use of child labor or payment of wages below a certain minimum or use of a work week longer than an arbitrary number of hours places a burden on interstate commerce or reduces its volume. It would be even more difficult to show that control of the volume of production, price fixing, and many of the other features of NRA have such effects on commerce. It is conceivable, of course, the argument could be made that federal conservation of petroleum production is necessary to retain a supply of petroleum to go into interstate commerce in the future.

Commissioner Critical, Denies Removal to Madison Order

By NEIL WILLIAMS

HOUSTON, Tex.—Commitment of O. H. Carlisle, division sales manager of Gulf Oil Corp., for removal to the federal court at Madison, Wis., to face trial on charges of "unlawful conspiracy in restraint of trade and commerce in gasoline" was refused by U. S. Commissioner W. F. Carothers, serving as a master in a hearing here which ended April 15.

Following a conference with Federal District Judge T. M. Kennerly after the decision in favor of Mr. Carlisle, Assistant Attorneys General Hammond E. Chaffetz and John Henry Lewin, representing the government, made known they would file a new complaint under the Madison indictment. Judge Kennerly set May 14 as the tentative date for the rehearing. Defense Attorneys John G. Green, Jr., and Archie D. Gary, of Gulf Oil Corp., were prepared to furnish bond upon rearrest of Mr. Carlisle.

Judge Kennerly said he would accept the case either on the old record made before Commissioner Carothers, or would permit a complete rehearing, at the discretion of the government attorneys. In event of accepting the record, he said he would review the case personally; otherwise he will be forced to appoint a master as for the first hearing.

Commissioners' Opinion

Commissioner Carothers' opinion follows:

"Evidently the defendant, Carlisle, was included in this indictment upon information incomplete in an important respect, because, although he is charged not as an individual, but as an official of one of the defendant major companies capable in his official capacity of furthering the ends of the alleged conspirators, it is stated in the indictment that his official position with the corporation is unknown to the grand jurors.

"The facts show that he was and is a subordinate officer in the corporation, without authority or power to shape its policies. He can only be held liable, therefore, for acts of his own knowingly furthering the ends of the conspiracy, namely the purchase of gasoline on the East Texas spot market 'in excess of the amounts which his company would have purchased apart from its participation in' the buying program in said market, mapped out by the conspirators.

"The defendant was and is 'divisional sales manager of the Gulf Refining Corp.' in charge of its purchases and sales in Texas. The records of the purchases made by him or through his office before and after the alleged artificial price rise in this market complained of in the indictment, which was in the months of March, April and May, 1935, show that the allegation that his purchases had anything to do with the rise is untrue. I have been furnished with a plotted curve of the prices complained about before and after the date of origin of the conspiracy, and on this plat I have traced the curve of the purchases made in Mr. Carlisle's division and an absolute independence of relationship is shown.

"It is a physical impossibility that the purchases made contributed in any improper way to the price rise complained of. It was some six months after the rise in the spot market of East Texas, namely in the month of November, 1935, before any appreciable increase in purchases by Mr. Carlisle appeared, after which they did rise to, and fluctuate thereafter at a higher level than previously, but in harmony with the historic general recovery of the country out of the great depression, and consequent increased demand for the products of his company's own refineries.

"The evidence is that the Gulf corporation had been in the habit of buying gasoline produced by other refiners to supply its customers when their demands exceeded the production of its own refineries, over a period of 20 years or more before this alleged conspiracy, and the defendant and his chief assistant, Mr. (H. S.) Gwynn, testified that such needs governed the volume of its purchases during all of the period covered by the indictment and its record of purchases corroborates this testimony and so far rebuts the allegations of the indictment as, in my opinion, to shift the burden back on the government to adduce evidence at least sufficient, when set over against this defense evidence, to raise an issue of fact for the jury.

"On this score counsel for the government point to four matters which they contend constitute evidence in support of the indictment to form such an issue of fact, namely, two telegrams sent to the defendant by his purchasing broker in the field, a visit to the defendant by Neil Buckley and the testimony of Mr. (Henry B.) May that 'the buying of the major companies in the East Texas spot market led the upward march of prices complained of in the indictment.' There are some other matters claimed by the government to come within this category, but they are trivial. . . .

Prejudiced Glasses

"I do not think government counsel would have referred to these four things as evidence for the government but for a most remarkable preconception on their part of events here in the Texas field. It is evident that, somehow, they see through prejudiced glasses and I will cite three instances to confirm this statement, while at the same time throwing full light on the supposed evidence.

"Government counsel believe there was criminality involved in the 1934 buying program; in the organization and activities of the East Texas Refiners Association and in the activities of Neil Buckley.

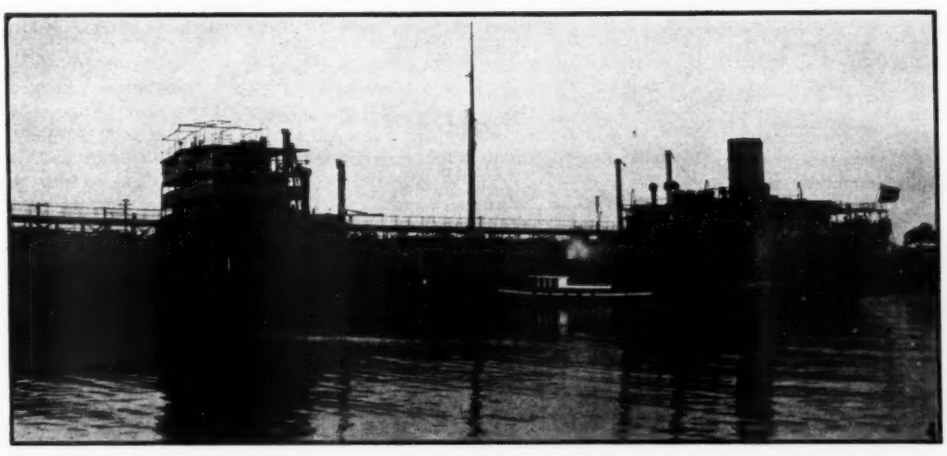
"I have listened for days while these gentlemen have cross examined witnesses with a skill that I have never seen surpassed in an endeavor to substantiate their preconceived idea of criminality in these three quarters, or rather, I should say clearly revealing their own belief in such criminality. I have thought that where there is so much smoke, there must be some fire, and I have been on the lookout for it at all times. Here are the plain facts:

"The 1934 program was set up by the federal government under the NRA, with the personal sanction of our illustrious president, and the Sherman antitrust law was expressly made inapplicable as to activities thereunder.

"How can suspicion attach to such a program?

"Possibly these gentlemen mean that it was unlawful in the sense that the Supreme Court finally declared it to be, but the Supreme Court did not hold and never would hold that the action of congress in sus-

SPANISH TANKER LOADED AT HOUSTON TERMINAL



Flying the tri-color of Spain and bound for Bilbao, the Spanish Loyalist tanker Campoamor cleared from Houston with 68,800 bbls. of gasoline, lubricating and medicinal oils

pending the antitrust law was beyond its lawful powers, and that acts performed under the protection of such suspension are criminal.

"Take now the East Texas Marketing Association which figures so largely in the indictment, but which is not made a party defendant. The testimony here is that said association was originated and organized by Mr. May, an independent East Texas refiner, one of those left in disgust by Mr. Ickes upon the breakdown of his 1934 program, as the latter dramatically declared, 'to stew in their own oil.'

"The testimony shows beyond all question that he organized this association along legitimate and even commendable lines. The major oil companies, except the Gulf, had left the East Texas field on the breakdown of the Ickes' program, prices crashed and Mr. May's company was forced to close down in January, 1935. His theory was that the major companies left the East Texas field because they did not want to buy and attempt to handle illegal gasoline and that if he could get enough of the small refiners to agree to handle nothing but legal gasoline and could assure the major companies that the product was legal gasoline they could induce the major companies to return to this field. His effort was to get out of illegality into legality and yet the government in this case surrounds him and all of his activities with the utmost suspicion.

"The association he formed could not have been worth a penny to the alleged conspiracy of the major companies to return to and buy in this field. They could have shut their eyes and bought from any and everybody (after the Connally act which went into force at the same time), and it would have served their purposes. In other words it was not a matter of who they bought from, but the fact of their reentry into the field which helped to raise prices. Therefore, every reference to the East Texas Refiners Association in the indictment is gratuitous, serves no good purpose and might as well have been omitted.

"This leads to the consideration of the government's claim that the visit of Neil Buckley to the defendant, Mr. Carlisle, which was the first act of the said Mr. Buckley in behalf of the East Texas Refiners Association constitutes an evidential fact supporting the indictment and as such, along with the telegrams before mentioned and the testimony of Mr. May before mentioned, either separately or collectively form an issue of fact for the jury.

"The East Texas Refiners Association asked Neil Buckley to help them prove to the major companies that they would handle only honest oil and help the association to get the major companies to return to the East Texas field. It is incontrovertible that it would make no difference to Mr. May or the East Texas Refiners Association whether the majors came back in the form of a conspiracy or as individual purchasers. His object and that of his association would be equally served in either case, and, especially in view of his manifest efforts to get out of illegality into legality suspicion of his motives is unreasonable. He sent Mr. Buckley to the defendant, Mr. Carlisle, and other officials of the major companies on the mission described.

"The government makes much of the fact that Mr. Buckley was in the employ of one of the defendant major companies, which consented to his services on behalf of the East Texas Refiners Association. On that account they would have us believe that Mr. Buckley's visit to the defendant had something to do with the formation of the conspiracy alleged to have been formed by the major oil companies. That is not alleged in the indictment, but it is alleged that Mr. Buckley instigated and directed the unlawful purchases of the major companies. Suppose that is true, but if he went on any such mission to the defendant, it failed, according to the record of purchases made by him as above stated. Can this defendant be held for removal because some one visited his office with a plan to join him in a criminal conspiracy, provided he did not join? I do not think so. I do not think that this visit of Neil Buckley to the defendant casts even a suspicion upon the defendant and certainly cannot be considered as a piece of evidence sufficient to form or to take part in forming an issue for the jury.

"Turning now to the two telegrams, these are the facts: The purchasing broker for the Gulf, a Mr. Bradshaw, on two occasions wired Mr. Carlisle, or his office, substantially to the effect that the East Texas Refiners Association in one instance and a small refiner at Thrall, Tex., in the other, had some distress gasoline, and in the telegrams was a statement that the market would or might break if they could not sell. In one case Mr. Carlisle's department bought a few barrels, in the other case it did not.

"The implication of the government is that those telegrams indicated that Mr. Bradshaw thought that Mr. Carlisle would be interested in sustaining the market. Defense counsel urges that these telegrams were merely routine information as to the state of the market.

"But granting the construction placed upon the telegrams by the government and that they indicate that Mr. Bradshaw thought Mr. Carlisle would be interested in sustaining the market, are the telegrams evidence in support of the allegations of the indictment sufficient to form an issue of fact requiring this defendant to go to Wisconsin and answer to the jury, especially in view of the evidence I have mentioned? I do not think so.

"Coming now to the testimony of Mr. May that 'the buying by the major oil companies in the East Texas fields in March, April and May, 1935, led the procession of price rises complained of,' the evidence shows that the Gulf company did not forsake the East Texas field when the other majors withdrew upon the breakdown of the Ickes program. Its record of purchases shows that it continued to purchase throughout the depression following the breakdown of the Ickes program and prior to the date of the conspiracy, and continued right through the price raise and for six months after with perfectly normal purchases. Therefore it is incontrovertible that the price raise was caused by the influx of the other major companies and not by any additional purchases by the Gulf, and the testimony of Mr. May cannot be considered as a piece of evidence against this defendant.

"If I am required to rule at this time it will be to discharge the defendant.

"If I did so I understand the remedy of the government would be to ask the court whom I represent to enter a summary rule and take over this hearing himself. That proceeding would be *de novo* and the government would have the opportunity to supply the evidence which I hold is now lacking. Therefore I think it would be in the interest of all parties if I now offer the government an opportunity within any reasonable time we may agree upon to offer such evidence before me."

Action at Madison

MADISON, Wis.—Three major oil company executives pleaded not guilty to indictments charging violation of the antitrust act in federal court here April 15 and were permitted to join other defendants in motions to be argued April 21 and 22. Judge Patrick T. Stone continued the bonds of Jacob France, Baltimore, president and general manager of Mid-Continent Petroleum Corp.; Edward Seubert, Chicago, president, and Allan Jackson, Chicago, vice president, Standard Oil Co. (Indiana).

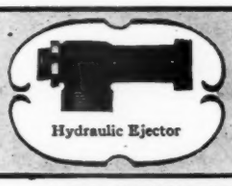
OBITUARIES

O. T. DAWSON, of Tulsa, 57 years old, vice president of National Supply Co., died April 19 at a hospital in Kansas City, Mo. He had been in ill health for many months and went to Kansas City late in

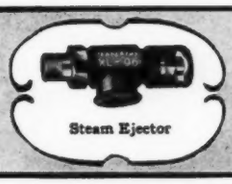
O. T. DAWSON

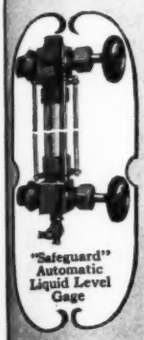
March, but did not recover from an emergency operation. A complication of diseases was the cause of death. Mr. Dawson was born August 22, 1879, at Lost Creek, W. Va., and began his career in the oil country as a supply store attendant with the Oil Well Supply Co. at Sistersville, W. Va., when about 18. He was moved to Independence, Kans., and then to Peru and Sedan, and in 1905 joined the National Supply Co. In March, 1907, he was made agent of the National store at Peru, and when the Glenn pool was discovered that year was transferred to Tulsa as a special agent and remained until 1909. After a few years at Independence he was returned to Tulsa as agent in 1912 and later made manager and some years ago a vice president. He is survived by his widow; a brother, L. D. Dawson, with the Stanolind Pipe Line Co.; a brother and three sisters in Clarksburg, W. Va., and a nephew, Paul Ziegenfuss, of Kansas City, Mo. He was a member of the Mid-Continent Oil and Gas Association and the American Petroleum Institute, and had been a director for 10 years of the International Petroleum Exposition.

NORWOOD LYKES, 49, died recently at Texarkana, Tex. Funeral services were held at San Antonio, and the body will be shipped to his old home at Lykesland, South Carolina. Mr. Lykes had been actively engaged in the oil business for 25 years. He was formerly associated with Carter Oil Co. in the Mid-Continent and represented Standard Oil Co. of New Jersey in foreign service, including North Africa and the Argentine. At one time he was head of the land department of Indian Territory Illuminating Oil Co., Bartlesville, Okla. At the time of his death he was operating in Louisiana and Arkansas. He was a world war veteran, having seen active service in France. His home was in Shreveport, La. Survivors besides his widow and his daughter, Olive Ann, are a brother, H. P. Lykes, of Lykesland, S. C., and a sister, Mrs. A. M. Sentz, of San Antonio, Tex.


Hydraulic Ejector

PENBERTHY PRODUCTS

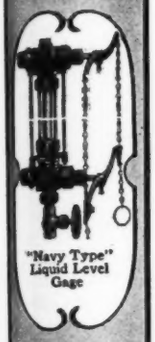

Steam Ejector


"Safeguard" Automatic Liquid Level Gage

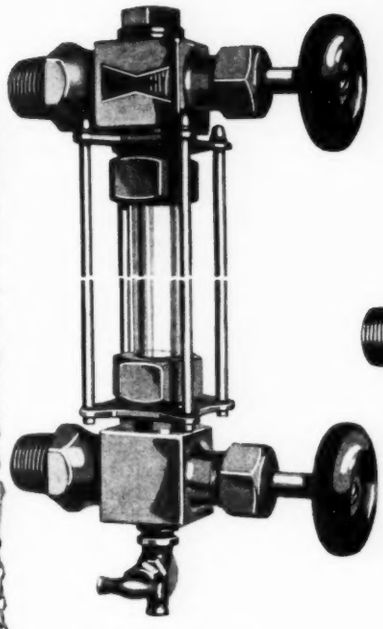
Automatic Injector

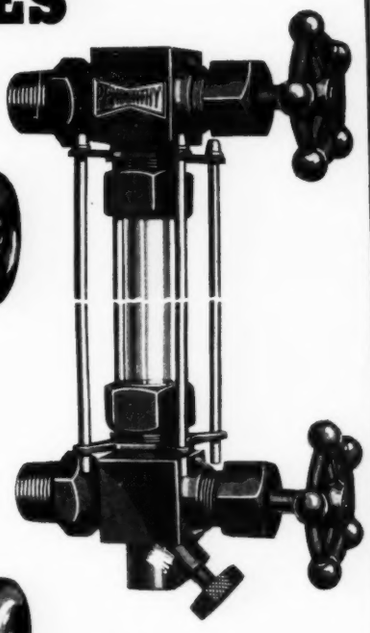
PENBERTHY LIQUID LEVEL GAGES

MEET ALL OIL INDUSTRY NEEDS


"Navy Type" Liquid Level Gage

Gas Engine Lubricator

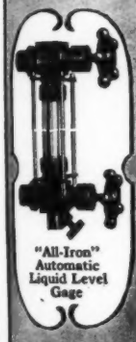




"ALL IRON"
500 LBS. WORKING PRESSURE
750° F.

"SAFEGUARD"
300 LBS. WORKING PRESSURE
500° F.

"NAVY TYPE"
350 LBS. WORKING PRESSURE
500° F.


"All-Iron" Automatic Liquid Level Gage

Snap Lever Oiler

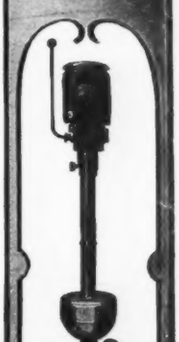
THE three gages shown here are very popular in the oil industry because of their consistently dependable operation. All of them are ruggedly built of the highest grade materials by an organization that has had 48 years experience in the manufacture of quality products. The "Navy Type" is made from Navy Bronze Composition M, the "Safeguard" from high grade steam metal bronze and the "All Iron" from a modern electric iron alloy.

All these gages have automatic shut-off. Both upper and lower body have ball check valves that seat immediately and positively to prevent the loss of liquid when glass is broken. The hand operated stop valves may then be closed with safety and a new glass inserted.

Each gage is carefully tested and rigidly inspected at the factory. For detailed descriptions write for a copy of the new catalog.

Penberthy Liquid Level Gages are carried in stock by supply houses everywhere.

Automatic Cellar Drainer (Water or Steam Operated)


Automatic Electric Sump Pump

PENBERTHY INJECTOR COMPANY

DETROIT, MICHIGAN
WINDSOR, ONTARIO

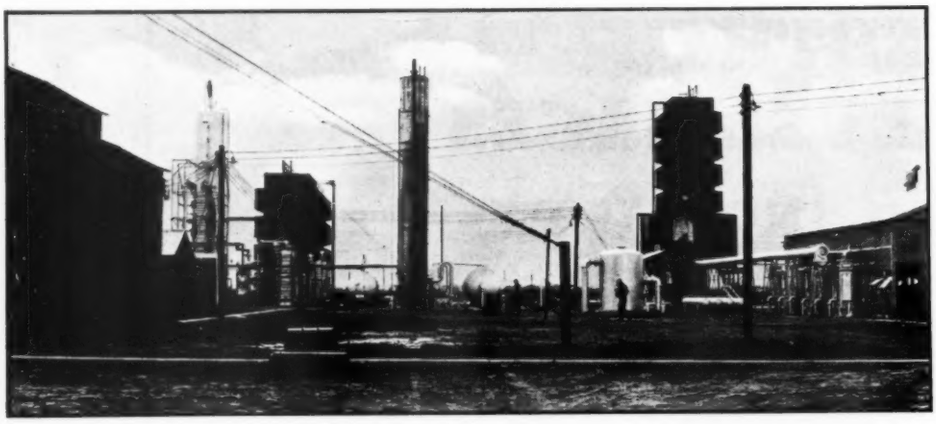
MANUFACTURERS OF QUALITY PRODUCTS SINCE 1886

Spring Compression Grease Cup

Plain Compression Grease Cup

Screw Plunger Grease Cup

Natural Gasoline



Shell Petroleum Corp.'s natural gasoline plant at Iowa, La.

Skelly Adds Plant

Skelly Oil Co. will start construction this week on a 15,000-gallon-per-day natural gasoline plant in NE quarter section 13, Block M-21, T.C.R.R. Survey, Hutchinson County, Texas. The plant will take gas from approximately 130 wells and will produce approximately 10,000 gallons of gasoline daily after it starts operating. In designing the plant, provisions have been made to enable the company to expand the plant facilities most economically and enlargement of the units will be carried out as the local producing fields are more intensively developed.

The plant will include approximately 50 per cent new equipment and the balance will be moved to the location from other plants of the company. Absorption equipment capable of handling in excess of 2,000,000 feet of gas will be installed immediately. The construction work is expected to be completed no later than June 1.

Production Higher in February

The production of natural gasoline in the United States showed a marked increase in February, 1937, according to a report prepared by the Bureau of Mines for that month. The daily average in February was 5,347,000 gallons as compared with 5,056,000 gallons in January and 4,629,000 gallons in February, 1936. The increases were generally well distributed throughout the United States with the Applachian area and East Texas showing the largest gains in daily average production.

Production of the various districts, in gallons, during the month was as follows: Applachian, 7,164,000; Illinois, Michigan, Kentucky, 955,000; Oklahoma, 33,670,000; Kansas, 4,707,000; Texas, 43,104,000; Louisiana, 7,286,000; Arkansas, 796,000; Rocky Mountain, 5,204,000; California, 46,844,000. The total production for the month was 149,730,000 gallons as compared with 156,744,000 gallons in January.

Stocks increased in both refineries and at plants and terminals, the total on February 28, 180,180,000 gallons, being 10,836,000 gallons above the total on hand at the beginning of the month. Stocks at refineries on the last of the month were 111,258,000 gallons as compared with 106,638,000 gallons on February 1, while stocks at plants and terminals were 68,922,000 gallons and 62,706,000 gallons, respectively, for the two dates.

Shipments of natural gasoline to jobbers and retailers and exporters totaled 21,354,000 gallons, or slightly less than in January. The average vapor pressure of shipments to refineries and refinery-owned bulk plants decreased, but that of shipments to jobbers and exports increased in February as compared with January. The weighted average vapor pressure of all shipments declined from 21.41 in January to 20.68 in February.

Plan La Blanca Field Plant

HOUSTON, Tex.—A number of natural gasoline manufacturers are reported seeking contracts for gas production in the La Blanca field of Hidalgo County, Texas, with the view of building a natural gasoline plant in the field. The new field, located in the heart of the citrus belt in the lower Rio Grande Valley was recently extended 1¼ miles to the north by completion of the Sterling Oil & Refining Co. No. 1 Engleman. Production consists of a high gravity distillate together with considerable gas. Three wells are now producing in the field, and the recently opened extension promises to incite further drilling activity shortly.

Cabot Clearing Plant Sites

FORT WORTH, Tex.—Cabot Carbon Co., which is now erecting a carbon black plant just west of Wickett in Ward County, the first carbon black plant to be built in West Texas, is now clearing site for another such plant. The new plant will have 50,000,000-foot daily gas capacity. The company is also clearing a site for a casinghead gasoline plant in the Keystone field in Winkler County, Texas.

To Enlarge Plant Capacity

HOUSTON, Tex.—Southern Minerals Corp., which recently placed in operation a 20,000,000-foot natural gasoline plant in the Saxet field of South Texas, is completing plans for additions which will double the capacity. The rapidly developing production of the Frio sands of Saxet, which supply the raw gas to the plant, has necessitated the expansion of the plant.

Refinery Projects

To Build Tasmania Refinery

NEW YORK.—The TVP Corp., subsidiary of Petroleum Conversion Corp., has been awarded contract to design oil refining equipment to be built by the Adelaide Oil Exploration Co., Ltd., of Adelaide, Australia. The plant, which is to be located on the island of Tasmania, will be comprised of an oil-shale retort unit, cracking unit and other equipment to produce motor fuel from oil-shale deposits found on the island.

Phoenix Erecting Plant

HOUSTON, Tex.—Phoenix Refining Co. is now constructing a new 1,500-bbl. refinery at Rio Grande City, Tex., with plans for completing the plant by May 15. The plant will operate on crude produced in the Rio Grande City and El Tanque pools. The company plans later to increase the capacity of the plant to 2,500 bbls. daily.

Oil Circulation Begun in New Atlantic Atreco Refinery

HOUSTON, Tex.—An important step in the growth of Gulf Coast refining is marked this week by initial operation of a complete 18,000-bbl. plant by the Atlantic Refining Co. According to an announcement by W. M. Irish, president, circulation has begun in the new plant, and full operation will be started shortly.

Construction at Atreco was begun in the summer of 1936 by the M. W. Kellogg Co. The design of the combination cracking plant was formulated by Kellogg engineers under license of the Gasoline Products Co., Inc. In addition to this unit, the refinery comprises a thermal polymerization plant, designed and built under patents held by the Polymerization Process Corp. The latest design of auxiliary equipment makes this refinery one of the most modern in the world.

Following the current trend toward increased flexibility in combination skimming and cracking units, the plant will allow a wide variation in operations. Variable fractionation facilitates the withdrawal of several straightrun cuts, and the combined reforming, cracking and viscosity breaking processes incorporated in its design, contribute further in adaptation of operations to fluctuating demand conditions.

The East Texas crude charged to the plant will be broken down roughly into seven cuts, namely: Naphtha, reforming stock, light and heavy gas oils, two grades of furnace oil and reduced crude bottoms. The high yield of East Texas gasoline withdrawn overhead from the crude tower will be blended with cracked and polymerized stocks to give a high-octane motor fuel. The next cut taken off between naphtha and light gas oil will approximate 50 gravity and will serve as charging stock to the reforming step. Two grades of gas-oil cracking cuts instead of the usual one are made in the crude distillation step.

The polymerization plant will form an integral part of the refinery, in converting cracked gases into high-octane blending fuel. The unit is capable of handling 10,000,000 feet of gas per day, and an expected daily yield of gasoline under normal plant operations is placed at 1,200 bbls. Hydrogen sulfide in the gas to be charged to the unit will be removed by the Girbotol gas purification process.

The new refinery is ideally situated at the deepwater terminals of two Atlantic trunk pipe lines. A 10-inch, 35,000-bbl. line from Midland to Atreco links the deepwater docks with Atlantic production in West Texas fields. East Texas crude, from which the refinery requirements will be taken, is moved to the plant site by a 10-inch, 181-mile line capable of handling 30,000 bbls. daily.

In manning the new plant, the company has given preference to men employed at Franklin and Brunswick. Those men electing to take jobs

at the new refinery were moved together with their families and possessions at company expense to the Gulf Coast. About 80 families have arrived from Pennsylvania and between 35 and 40 have come from Georgia.

Heading plant operations at Atreco as plant manager is M. J. Welsh. Mr. Welsh has seen 45 years of service with Atlantic at Franklin and Brunswick. Assisting him at the new plant are Robert Stewart, superintendent, and Harold E. Ramsey, works engineer.

To Build Polymerization Unit

SHREVEPORT, La.—Standard Oil Co. of Louisiana has announced intentions to complete plans and begin immediate installation of a polymerization unit at their Baton Rouge refinery, cost of which will approximate $650,000. This enlargement of the refinery is in addition to the recently announced $2,750,000 lubricating oil plant, plans for which are now being completed.

Pipe Line Work

New Line East of Eureka, Kans.

Stanolind Pipe Line Co. has awarded contract to Williams Brothers, Inc., Tulsa, to lay 12 miles of reconditioned 8-inch pipe from Eureka, Kans., eastward. This line will be welded and pipe coated in accordance with the pipe line company's standard specifications.

Oklahoma Line Takes Up More Pipe

Oklahoma Pipe Line Co. crews are taking up the 13-year-old pipe line between Madill and Hugo, Okla., consisting of 31.92 miles of 8-inch and 3.08 miles of 10-inch pipe. The 10-inch section of this line is on the east end of the section now being taken up and is between Bokchito and Hugo, Okla. All of this work is being done by Oklahoma Pipe Line Co. men but the hauling to the pipe yards has been contracted. At the pipe yards this pipe is cleaned, graded, reconditioned and made ready for use again in welded pipe line in other sections of the Oklahoma Pipe Line Co. system. It has been found a large proportion of this old pipe can be made suitable for high pressure service by reconditioning.

Standish Increasing Kansas System

Standish Pipe Line Co., subsidiary of Phillips Petroleum Co., Bartlesville, Okla., awarded a contract to Williams Brothers, Inc., Tulsa, to take up about 15 miles of 6-inch pipe line near Burlington, Kans., and recondition and relay this pipe with an additional 12 miles of new 6-inch pipe along the right of way of the present pipe line between Lyons and McPherson, Kans. This is to be a welded job and when finished will materially increase the capacity of the Standish Pipe Line Co. system serving the western Kansas fields.

Barnsdall Corpus Christi Line

Williams Brothers, Inc., Tulsa, have started stringing the pipe along the right of way between Placedo, Victoria County, Texas, and Corpus Christi, preparatory to starting ditching and laying the new 70-mile 6-inch line to serve the Barnsdall Oil Co.'s new refinery at Corpus Christi, Tex. Now that the pipe has begun to arrive at destination this work will be carried forward rapidly.

Natural Gas News

Pennsylvania Oil and Gas Program

The seventh petroleum and natural gas conference of the School of Mineral Industries of the Pennsylvania State College held jointly with the Pennsylvania Natural Gas Men's Association will convene April 30 and will open with a paper by C. W. Georgi, Enterprise Oil Co., Buffalo, N. Y., on hypoid gear lubricants. A second paper, entitled, "Application of Electrical Well Logging in the Appalachian Fields," will be presented by W. J. Gillingham, of the Schlumberger Well Surveying Corp., Houston. An important paper will be presented by Harry M. Ryder, of the Ryder-Scott Co., in Bradford, on "Well Shooting With Special Reference to Secondary Recovery Operations."

Saturday morning geophysical prospecting will be discussed in a paper presented by L. E. Randall, of the Geophysical Exploration Co. of Charleston, W. Va.

A. L. Black, of Ford, Bacon & Davis, Inc., New York, will present a paper Saturday morning on "Pipe Corrosion, Electrolysis and Cathodic Protection."

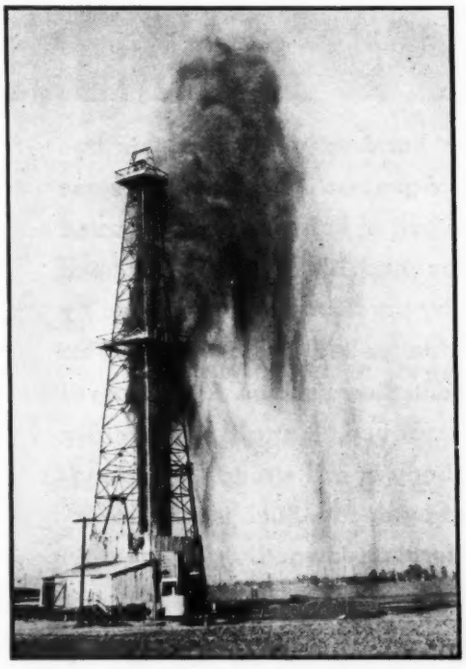
New London Explosion Report

Conclusions of specialists of the Bureau of Mines detailed to investigate the explosion at the New London, Tex., school were given in a letter to James V. Allred, governor of Texas. The bureau's representatives were D. J. Parker, Salt Lake City, Utah, a mining engineer with years of experience in the investigation of gas and dust explosions; G. W. Jones, Pittsburgh, Pa., an authority on the theory of gas explosibility, and H. B. Hill and Gustav Wade of the bureau's petroleum field office at Dallas, Tex. Their findings follow:

The immediate cause was an explosion of a gas-air mixture, resulting from an accumulation of natural gas in an unventilated space beneath the first floor. This space had a volume of approximately 46,000 feet. The physical evidence shows the source of ignition was near the north end and the explosion propagated in a southerly direction. The manipulation of an electric switch in the manual training room near a door leading into the unventilated region ignited the gas.

The gas was present because of leakage from gas lines and their fittings suspended beneath the floor, with virtually no method of detecting the gas or of removing it by natural or forced ventilation.

The gas did not seep through the soil; this was determined fully by evidence secured from 71 test holes drilled to the rock below the surface formation. Numerous tests were made of the atmosphere in the holes by means of detectors for inflammable gas.



OUT OF CONTROL—The El Segundo field, California, had its first gas blowout when No. 3 Gough of Ohio Oil Co. blew in out of control while crew was coming out of the hole with a core sample

Gas Strike Settled

FORT WORTH, Tex.—The four-day Lone Star Gas Co. strike ended Thursday night when service and maintenance employes ratified an agreement under which the workers gained union recognition but lost their demand that 26 men recently discharged be reemployed. They, however, will be returned to their posts on a seniority basis before others are employed, the company agreed.

The agreement is recognized by both factions as a compromise, Dr. Edwin T. Elliott, regional director of the National Labor Relations Board, who acted as conciliator, said. It will remain in force for a year.

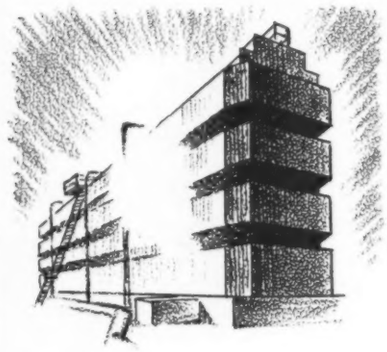
For four days prior to the settlement strikers held control of the warehouses and shops and prevented office workers from entering the main office. Unions recognized were the Gas Fitters and International Hod Carriers Building and Common Laborers locals, both American Federation of Labor unions.

"One agreeable thing about this strike is the fact that earnings for the stockholders were not interrupted," L. B. Denning, Dallas, president of the company, said.

Daily Average Production for Week

	Apr. 17, 1937	Apr. 10, 1937
Oklahoma City	167,225	165,425
Seminole-St. Louis	88,750	89,125
Remainder of state	401,425	387,075
Total Oklahoma	657,400	641,625
East Texas	460,098	460,697
West Texas	199,252	199,346
North Central Texas	103,846	104,349
Texas Panhandle	78,050	64,797
East Central Texas	115,796	119,098
Gulf Coast—Texas	317,136	324,598
Southwest Texas	101,747	101,900
Total Texas	1,375,925	1,374,785
North Louisiana	71,940	71,235
Gulf Coast—Louisiana	178,650	175,100
Total Louisiana	250,590	246,335
Santa Fe Springs	44,300	45,000
Long Beach	61,000	61,000
Kettleman Hills	80,000	78,000
Remainder of state	435,200	441,000
Total California	620,500	625,000
Kansas	192,575	178,775
Arkansas	27,540	27,540
Eastern fields	114,100	115,800
Michigan	42,712	41,163
Southeastern New Mexico	105,500	105,370
Rocky Mountain area	75,510	69,460
Total United States	3,462,352	3,425,853

LONG LIVE the GIANT



Fluor Aerator Type Cooling Towers are free from wind-blown spray. Water make-up requirements are reduced to the minimum. Perfect filming is effected by double panel bowed cooling decks, a design exclusive to Fluor. Pressure loss through aerators is negligible at wind velocities under six miles per hour; with increasing wind, pressure drop increases, which means that velocity across the cooling surface does not increase in proportion. As a result, water distribution is undisturbed; spray is not carried through the tower; cooling performance is uniform.

Thirty-two hundred years ago this tree was born. Ages ago it was felled by some smashing bolt of lightning, or prostrated by cyclonic wind. Meanwhile, it has been scorched by parching sun and chilled by frosty nights, pelted by torrential rains and buried in Sierra snows. After years of elemental abuse, though organically dead, its body is still strong and sound, untouched by decay. Such is the character of California Redwood.

Fluor Aerator Type Cooling Towers are built of this California Redwood, unsurpassed for its resistance to fire, water, heat, dryness and extremes in temperature. Add the inherent qualities of Fluor's structural material to the scientific merits of Fluor design and engineering and you have the Aerator Type Cooling Tower in which efficiency, space economy, water economy, good appearance and long life are combined.

FLUOR f USE THE WITH FLUOR **AERATOR TYPE COOLING TOWERS**

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Governor Marland Asks Crude Price Increase or Severance Tax

The request for an increase in the price of crude oil, made last Friday by Governor Marland of Oklahoma—with threat of a severance tax as an alternative—had brought no response from major crude oil purchasing companies Monday, when the governor said "I believe we will get a crude hike." His point was that if prices were advanced the increased yields under the present graduated taxes would yield the state the revenue needed without increasing the rates.

He set $2 a barrel as the price that should be paid but did not expect that much immediately. "They must not stop at a $1.50 a barrel, however," the governor said.

If the legislature adjourns May 1, action on any bill raising the oil tax in Oklahoma will have to be started this week. Revenue measures have to be on the governor's desk five days before adjournment.

Governor Marland's statement, in part, follows: "I want to sound a note of warning to the major oil companies who are purchasers of crude oil in Oklahoma. If we don't get a substantial increase in the price of oil immediately, we will have a severance tax on oil. There is no use of our increasing the gross production tax, based on a per cent of the price of crude, as long as the major oil companies control the price. . . .

"The independent producer of oil, whose sole income is the price at which he sells his crude oil, is passing out of the picture for the same reason the farmers are in distress. If the small producer does not get help soon, he is ruined and his little wells must be abandoned to his great loss and a great loss to the state. . . . Oil has never sold for what it was worth except in a very few years, the early 1920's.

"The people of Oklahoma will not stand for low prices for oil (an irreplaceable natural product) much longer. We must have high prices or a severance tax. . . . The tax on a gallon of gasoline in most states amounts to more than the price of a gallon of crude oil where it is produced in Oklahoma.

"The petroleum industry already pays more than its share of the cost of government in the United States and of all the states in which it operates, and that fact is reflected in the price paid for crude oil in Oklahoma. Crude oil and its products are carrying too much of the load of the cost of government in other states and we must not let the purchasers of crude take it out of the price paid by them for Oklahoma oil. . . . As a friend of the entire industry I say to the crude oil purchasing companies—get your prices up."

Rival Unions Continue Race For Oil Organization

While both C.I.O. and A.F. of L. representatives continued efforts to organize oil workers last week, little evidence was visible that either were having much success. Leaders of the rival bodies indicated their intention to continue their campaigns. It was announced the C.I.O. has set up Oklahoma state headquarters in Oklahoma City this week and in other key points, including Kansas City, Mo.; Ponca City, Okla., and Augusta, Kans. At the same time it was reported the A.F. of L. had sent Lee Burton, of St. Louis, into the oil fields.

A report was heard that the C.I.O. might concentrate on organizing pipe line workers in hope of paralyzing a major branch of the industry and thus be able better to dictate terms.

The principal development in the Houston, Tex., area was appointment of organizing committees.

THE MARKETS*

CRUDE OIL: *Markets generally firm despite record production with latest available reports showing large additions to storage. Active solicitation of new well connections in the active fields by crude purchasers.*

REFINERY: *No important general developments in tankcar sales. Gasoline demand increasing and prices firm at present levels. Tractor fuels strong.*

TANK-WAGON AND SERVICE STATION: *No general changes reported in gasoline, kerosene or fuel oils.*

FINANCIAL: *Need for higher prices for crude oil and refinery products to offset increased labor and equipment costs apparent if favorable earnings of first quarter are to continue over remainder of year. Average prices of 30 representative stocks for week ending April 17: High, 44.63; low, 42.35; close, 43.57. Week ending April 10: High, 44.66; low, 41.54; close, 42.89.*

*Details in Market Section.

Madison Trials Postponed Until September 27

MADISON, Wis., Apr. 20.—Trial of the government's antitrust cases against oil companies was set for September 27 in federal court here today when defense attorneys informed Judge Patrick T. Stone they will be unprepared for trial by June 1.

Col. W. J. Donovan, chief of counsel for a majority of the defendants, said one of the chief difficulties arose from inability to discuss evidence with witnesses before the grand jury, the effect of the oath of secrecy imposed upon these witnesses being manifested at Houston, Tex., when government attorneys at the removal hearing of O. H. Carlisle, Gulf official, were able to cross-examine a witness on testimony before the grand jury about which defense attorneys knew nothing.

"From previous observations," the court said, "I am able to appreciate the tremendous task the defendants confront in preparation for trial."

I. A. O'Shaughnessy, Minneapolis, president of Globe Oil & Refining Co., was arraigned today and his bond continued.

Arguments were started on a motion to set aside the indictments in relation to Tide Water Oil Co. of New Jersey and officials of the no-longer-existing concern, including J. W. Warner and R. O. Audrain, Tulsa, E. L. Shea and Noel Robinson, New York.

Betheul M. Webster, counsel for the company, read an affidavit by Mr. Shea, as former president denying the government's inferences that Tide Water Co. of New Jersey was dissolved on Sept. 4, 1936, as a result of the July 28 indictment. The government's brief had contended the Sherman act never intended aggregations of capital should go free of punishment by "dissolutions of corporate entity in the nature of attempted suicide."

The consolidation with Tide Water of Delaware was one of 12 consolidations under a long-considered program by Tide Water Associated, holding company of 48 affiliated firms, Mr. Shea's affidavit said. The program, delayed by the depression, was occasioned by need for simplification in view of the new revenue laws, and the way was not opened clearly to such consolidations until the Revenue act of 1936. The government's suits had no effect upon plans to transfer the assets of the New Jersey corporation.

Asked by Judge Stone if this explanation did not place "a new light" on the situation, John Henry Lewin, government counsel, declared the purpose of the consolidation had no bearing upon the case. "The objective result is the same."

D. E. Buchanan Heads A.P.I. Paris Delegation

D. E. Buchanan, president of Hanlon-Buchanan, Inc., Tulsa, has been appointed chairman of the A.P.I. delegation which will attend the World Petroleum Congress to be held in Paris in June. Announcement of the appointment was made by Axtell J. Byles, president of the A.P.I. Mr. Buchanan previously had been notified of his selection as official chairman of the entire American delegation by Secretary of State Cordell Hull.

D. E. BUCHANAN

Mr. Buchanan, who has been engaged in the manufacture and sale of natural gasoline for many years, will present a paper at the congress on "Natural Gasoline in World Motor Fuel Markets."

Other A.P.I. delegates who will attend the congress, announced by Mr. Buchanan, include: Dr. C. E. Lanning, Brettonham House, Lancaster Place, London; P. G. Bellemare, managing director of the C.I.P. in Paris; Phillipe Berard, president of the Vacuum Oil Co. of France; Herbert Baxley, Socony-Vacuum Co., New York; William M. Brewster, managing director, "Rafineries de Petrole de la Gironde," Paris; H. A. Hassen, Sinclair Refining Co., Paris; Dr. C. K. Francis, The Oil and Gas Journal; Wallace E. Pratt, Humble Oil & Refining Co., and Dr. Gustav Egloff, Universal Oil Products Co.

C. P. McGaha, president of Fain-McGaha Oil Corp., Wichita Falls, Tex., has been made chairman of a permanent subcommittee of the Independent Petroleum Association of America on "Unnecessary and Excessive Drilling."

the OIL AND GAS JOURNAL

PRODUCING REFINING NATURAL GASOLINE PIPE LINE

Published weekly by THE PETROLEUM PUBLISHING COMPANY at Tulsa, Oklahoma

Industry Takes Exception

While the oil industry has had occasion to be gratified by the action taken under the administration of Governor Marland of Oklahoma in furtherance of conservation and stabilization and fully appreciates his activity in organizing the Interstate Oil Compact Commission of which he was the first chairman, it cannot support him in his ultimatum of last week that "if we don't get a substantial increase in the price of oil immediately we will have a severance tax on oil."

An increase in price would mean an increase in the state revenue from the gross production tax. Otherwise, the governor threatens a flat tax on every barrel of oil produced to get the money.

The price of oil and petroleum products depends upon conditions and costs, upon supply and demand in an industry and market which is both national and international. Conditions during the past two years have pointed to a reasonable advance for crude and products after the long depression during which prices were too low but the governor's threat is less likely to hasten than to delay that normal development by injecting a disturbing factor into a previously hopeful situation.

While there has been some surplus crude going into storage in recent weeks it has not been considered serious and it has been assured that prices for petroleum and its products would be advanced in the near future.

Aside from the statistical situation there is the increased expense of operations, the advanced cost of material and equipment and the higher wages and salaries in an industry already at the top in wage earnings.

In the case of some companies this increase has already absorbed the price advance made last January, while the cost of finding new reserves of crude and of producing oil is steadily growing. These are the factors within the industry which demand and justify better prices, not the wholly extraneous need of the state for more revenue.

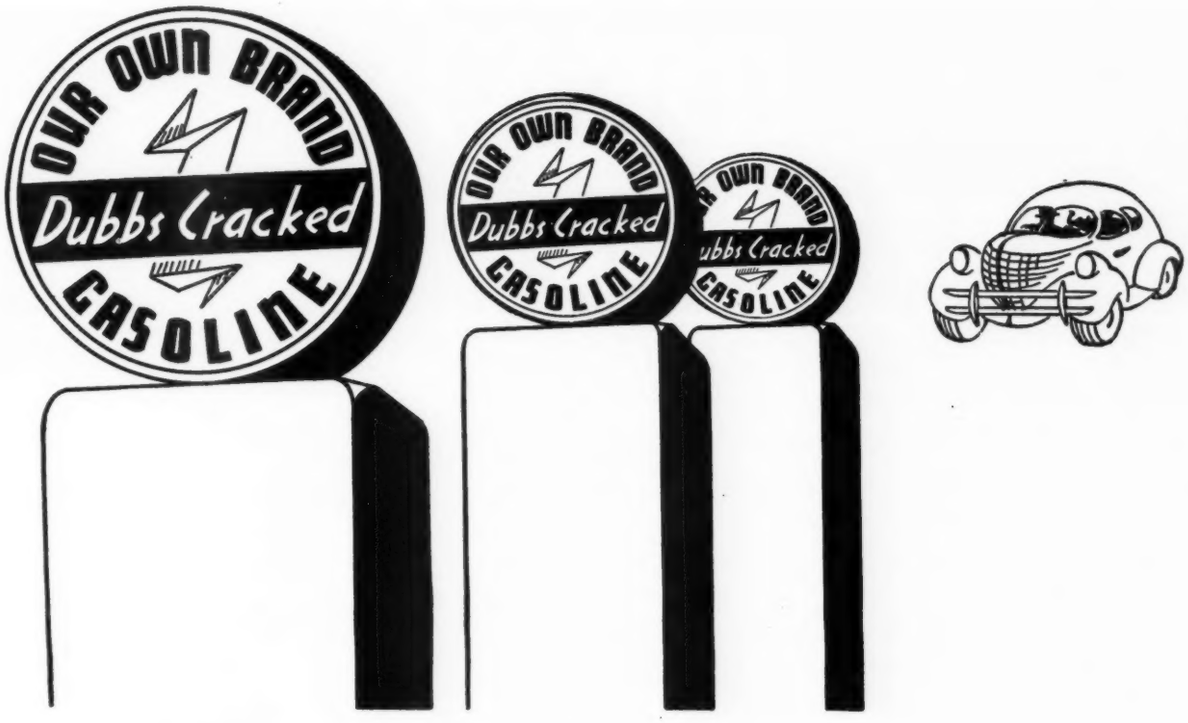
The governor's statement that "the purchasers of crude must advance prices and they can pass on the advance to the consumers" overlooks the probability that the consumers may have something to say about it and are very apt to say it to their representatives in congress.

The decision of the United States Supreme Court on the Wagner law seems to have unsettled a lot of ideas about federal control of production which were very positively held when federal control of the oil industry was a burning topic.

A congress representing a great bulk of consumers might readily revive federal control as a protection against exactions by oil producing states for local purposes.

Mr. Marland may recall that congressional ratification of the interstate oil compact was obtained only after positive assurances that it would not be used to increase prices to the consumer. That shows how sensitive congress is on the subject of oil prices, a sensitivity that cannot fail to react sharply to any admonition to "get your prices up and pass it on to the consumer."

Upon mature reflection Governor Marland may wisely decide to await the natural economic evolution of better prices which the consumer can accept as justified by conditions and not as merely the result of a state's demand for more revenue.



Sell it in sign language

IF you are selling Dubbscracked gasoline in secret you are throwing away a big sales advantage that you ought to cash in on

Dubbscracked gasoline is anti-knock, long-mileage gasoline Gradually your customers will find that out but they won't know why

And why waste selling time?

Tell 'em it's Dubbscracked—that's why it's good

Your pumps can't talk but they can sell in sign language and every sign ought to tell the motorist it's YOUR Dubbscracked gasoline

Give them the real reason why your gasoline is better—because it's Dubbscracked—and the gasoline will back up your claim

Universal Oil Products Co
Chicago, Illinois

Dubbs Cracking Process
Owner and Licensor

Type C **IDEAL** **14½" x 7½" x 18"**

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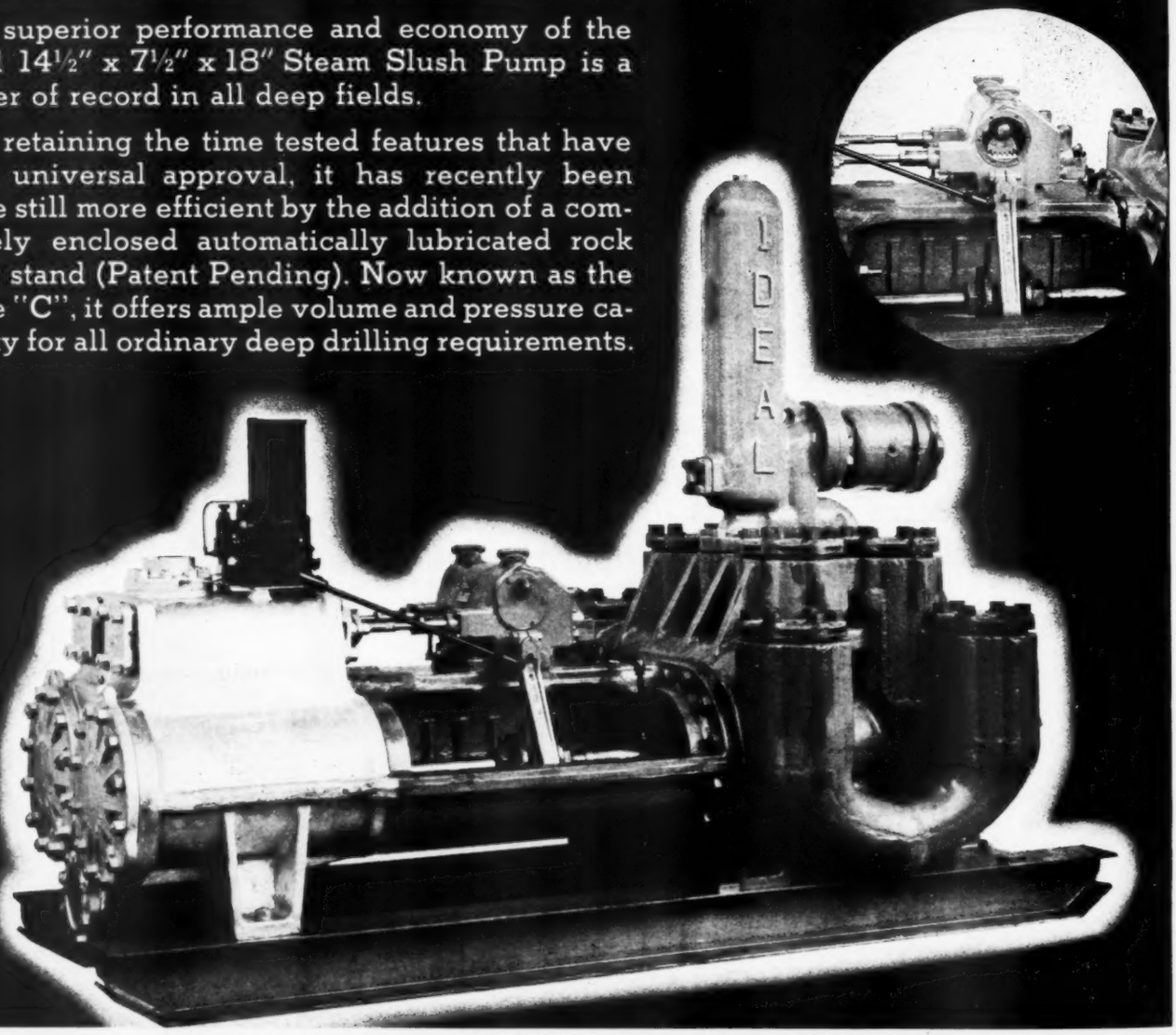
STEAM SLUSH PUMP

The superior performance and economy of the Ideal 14½" x 7½" x 18" Steam Slush Pump is a matter of record in all deep fields.

Still retaining the time tested features that have won universal approval, it has recently been made still more efficient by the addition of a completely enclosed automatically lubricated rock shaft stand (Patent Pending). Now known as the Type "C", it offers ample volume and pressure capacity for all ordinary deep drilling requirements.



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Oil News from Foreign Lands

Standard to Drill in England

Anglo-American Oil Co., Ltd., British subsidiary of Standard Oil Co. of New Jersey, is to start drilling an exploratory test in Sussex County, southern England, next month. The test will be several miles east of the Anglo-Iranian Oil Co.'s drilling operation at Henfield and south of Heathfield, a village where natural inflammable gas seepage has existed for years. The Anglo-American's initial exploration venture in England will be on what is known as the Grove Hill anticline following several month of geological study. Actual selection of the location was preceded by extensive core drilling.

Heavy duty rotary rig is now being erected. Due to meager information available, Anglo-American plans to core all formation changes.

In northern England, Steel Brothers & Co. plan to start drilling in June on an exploratory test in Derbyshire near the village of Upper Booth in the Edale Valley.

Venezuelan Production Record

Venezuela crude oil production set a new all-time record in March of 14,240,478 bbls., a daily average of 459,375 bbls. The Tia Juana field, immediately north of Lagunillas, figured in the production table for the first time in March. Mene Grande Oil Co., formerly Venezuela Gulf, reported production of 22,000 bbls. during the month from the Tia Juana field, a daily average of 710 bbls.

The nearest approach to the March record was in September, 1936, when production touched a daily average of 453,217 bbls. It tapered off during the last three months of 1936, falling to a low of 313,657 bbls. daily in December when a strike shut down all lake properties part of the month. The strike continued through part of January and February's output was at the average rate of 422,100 bbls. daily.

The all-time record production reported for March lends credence to estimates of some Venezuela observers that yield may touch or surpass the half million barrels per day mark before 1937 is ended. In view of the development program now under way in Tia Juana and other proven fields, the estimate of 500,000 bbls. by the end of 1937 appears entirely justified. Furthermore, there is the wildcat exploration program in eastern Venezuela which may account for additional production before this year is concluded but which is not included in probable production calculations.

Lagunillas remains the most important producing field. During March, Lagunillas produced slightly more than 56 per cent of the country's total crude output. The combined Lake Maracaibo fields continue to produce more than 80 per cent of Venezuela's crude.

With only two exceptions, all producing companies in Venezuela recovered greater amounts of oil last month than during the same period a year ago. The exceptions are Colon Oil Corp., which has not been active in maintaining its production until recently, and North Venezuela Petroleum Co., which has a carried interest in one of the less active fields. Lago Petroleum Co., and Standard Oil Co. of Venezuela produced a combined total of 7,774,859 bbls. from Venezuela last month, or a little more than 54 per cent of the total. However, part of Standard of Venezuela's production was for account of Creole, controlled by Standard of New Jersey but not 100 per cent owned.

Semiofficial figures on Venezuela petroleum exports in 1936 place the total movement at 156,290,134 bbls., of which Lago and Standard of Venezuela transported directly or indirectly 75,637,954 bbls. Venezuela Oil Concessions accounted for export of 41,071,835 bbls.; Mene Grande (Venezuela Gulf), 22,001,518 bbls.; Caribbean Petroleum Co., 12,447,407 bbls.; Colon Oil Corp., 4,374,286 bbls., and British Controlled, 757,120 bbls. Production figures for March follow:

VENEZUELA CRUDE PRODUCTION

By fields—	March 1937	March 1936	Daily aver., March, 1937
Lagunillas	8,032,759	7,324,227	259,120
La Rosa-Ambrosia	2,195,714	1,848,735	70,830
Mene Grande	1,089,700	1,011,685	35,151
El Mene	68,045	63,000	2,195
Tarra	320,300	427,335	10,332
La Paz	11,300	18,135	365
Concepcion	92,400	109,275	2,980
Cumarebo	200,296	262,145	6,460
Quiriquire	2,152,826	1,921,536	69,443
Pedernales	55,138	.....	1,779
Tia Juana	22,000	.....	710
Total	14,240,478	12,986,073	459,375
Daily average	.....	418,905	.....
Daily av. Feb. '37	.....	422,100	.....
By companies—			
Lago Pet. Co.	4,898,455	4,149,841	158,015
Venezuela Oil Con.	3,579,500	3,397,445	115,468
Std. of Venezuela*	2,876,404	2,551,231	92,788
Caribbean Pet. Co.	1,089,700	1,011,685	35,152
Colon Oil Corp.	320,300	427,335	10,332
Mene Grande†	1,358,000	1,320,000	43,808
British Controlled	68,045	63,000	2,196
No. Venez. Pet. Co.	50,074	65,536	1,616
Total	14,240,478	12,986,073	459,375

*Includes Creole's share in Laqunillas and La Rosa.
†Formerly Venezuela Gulf Oil Co.

Tasmanian Oil Shales

Commercial extraction of oil from shale on the island of Tasmania is to be attempted by Adelaide Oil Exploration Co., of Adelaide, Australia. The Adelaide company is well advanced in plans for an oil shale retorting unit capable of processing 1,000 tons of shale per day and in the proposal to construct a TVP cracking plant to produce motor fuel and other products. TVP Corp., a subsidiary of Petroleum Conversion Corp., has been awarded a contract to design and furnish plans for a cracking plant to be licensed by N. V. Nieuwe Octrooi Maatschappij, an affiliate of Petroleum Conversion, located at The Hague.

A. Rozlosnik, of Buenos Aires, mining engineer in charge of Argentine Government Oil Fields, who has been visiting the United States

India's Production Increase

Official crude oil production figures for India during 1936 place output at 9,619,104 bbls., an increase of 4.2 per cent over the preceding year's yield.

All of the increase was registered in Burma and Punjab with a slight reduction in Assam.

The production figures, reported by C. Grant Isaacs, trade commissioner located at Calcutta, India, follow:

(Figures in Barrels)

	1936	1935
Burma	7,563,515	7,184,360
Punjab	125,740	103,330
Assam	1,929,849	1,939,617
Total	9,619,104	9,227,207

In general, petroleum trade in India followed the upward swing of other business. Prices of all classes of mineral oils were generally steady throughout the year. Petroleum consumption increased over the preceding year.

Gasoline consumption for the year is reported at 2,679,227 bbls., an increase of 10.2 per cent over 1935.

In the annual report, considerable significance is accorded entry of the California-Texas Oil Co., Ltd., into the India market, an announced plan which will be in operation during the last half of 1937.

Prospecting in Ethiopia

Vast territories in the Harar and Ogaden regions of Italian East Africa (Ethiopia) are being investigated by a scientific mission of the Azienda Generale Italiana Petroli.

Two prospecting parties are active at Diredawa and a third has landed at Megadiscio where exploratory investigations are being conducted in the Webbe Shibe'i Basin.

Shallow tests to around 500 feet have been drilled in the Dahlac Islands off Massaua and the exploration program has been extended to include drilling to around 4,000 or 4,500 feet.

In addition to its exploratory activity in Italian East Africa, A.G.I.P. is expanding its petroleum interests in several other directions. The Italian government sponsored company recently ordered three new motor tankers from Italian shipyards at Palermo, Trieste and Genoa. The three new tankers to be built simultaneously will each have capacity of about 13,500 tons. They will be available for service by the middle of 1938. All modern developments in tanker construction are specified for the three new A.G.I.P. vessels. All will have cruising speed of 13 knots and displacement, when fully loaded, will be 19,600 tons for each boat. Dependent as it is on overseas countries for its liquid fuel requirements, a certain number of foreign boats are needed to meet petroleum demand. Only 25 per cent of the Italian registered tanker fleet is motorized while the remaining 75 per cent is dependent on steam. Furthermore, only 27 per cent of the Italian tankers have a speed of more than 10.5 knots. The entire Italian tanker fleet has less than 450,000 tons displacement, compared to the world tanker tonnage of 12,000,000.

Netherland Concessions

Contracts have been negotiated by Nederlandsch Koloniale Petroleum Maatschappij, Standard-Vacuum unit, for three new concessions in the Netherlands East Indies.

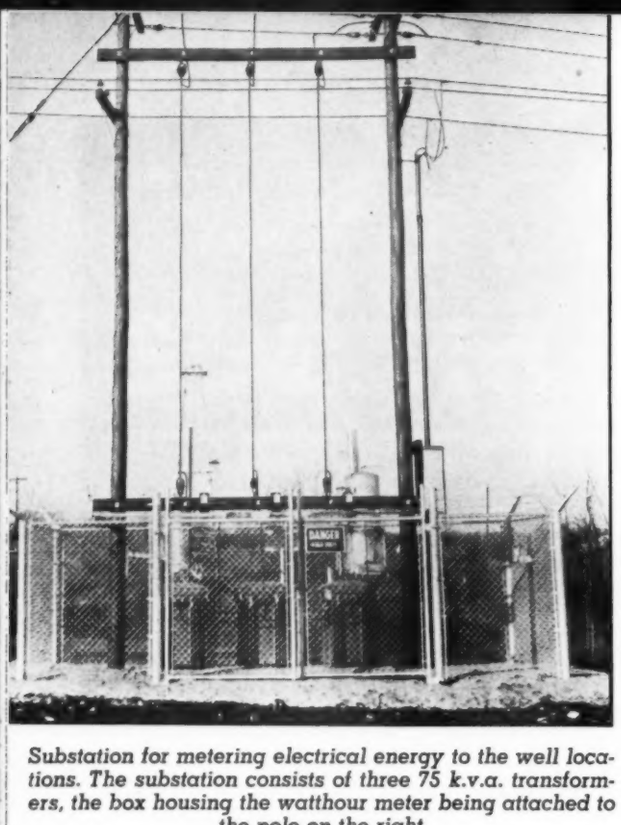
Two of the new concessions are in the Palembang district in eastern Sumatra, one of 176,250 hectares at Moesik and one of 415,000 hectares at eastern Ogan. The third concession involved consists of 603,000 hectares in Borneo, west of the Barito River.

Japanese Subsidy Approved

A subsidy totaling 95,000,000 yen, spread over a period of years, has been approved by the Japanese government for promotion and protection of synthetic oil in Korea.

Field Conditions to Generating

By W. C. LANE
Electrical Engineer, E. H. Moore, Inc.



Substation for metering electrical energy to the well locations. The substation consists of three 75 k.v.a. transformers, the box housing the watthour meter being attached to the pole on the right

The first three generating units in the power plant, from which electrical energy for pumping the wells of E. H. Moore, Inc., in the Fitts pool of Pontotoc County, Oklahoma, is supplied, were put in regular service about three months ago. That the management believes in preparedness is evident from the fact that at the time the company's lines were first energized only five wells had reached the pumping stage. At the time this is written 16 wells are being pumped with electric motors, 5 others located beyond the reach of existing secondary lines are operated with multiple-cylinder, high-speed gas engines and pumping units are either set or are being installed on 15 others.

The decision to electrify the property was reached only after a careful study and analysis had been made of the various phases of the problem involved. In order for one to understand why certain conclusions were reached it is well to have in mind the conditions existing during the early part of 1936.

At that time 112 producers had been completed on the company's property, and it was estimated that a total of 140 wells will have been completed when the property is fully developed. It may be said in passing that 163 wells are now actually on production including 1 Cromwell sand, 32 Hunton, 111 Bromide-McLish, and 19 Wilcox wells. Fourteen drilling-rigs are running, some on maiden locations and others drilling a twin or a triplet well. In the eastern end of the field E. H. Moore has completed 20 wells as good producers, and 3 or 4 others are drilling in territory that a year ago was thought to hold little promise. Obviously plans prepared nine months ago must be modified from day to day.

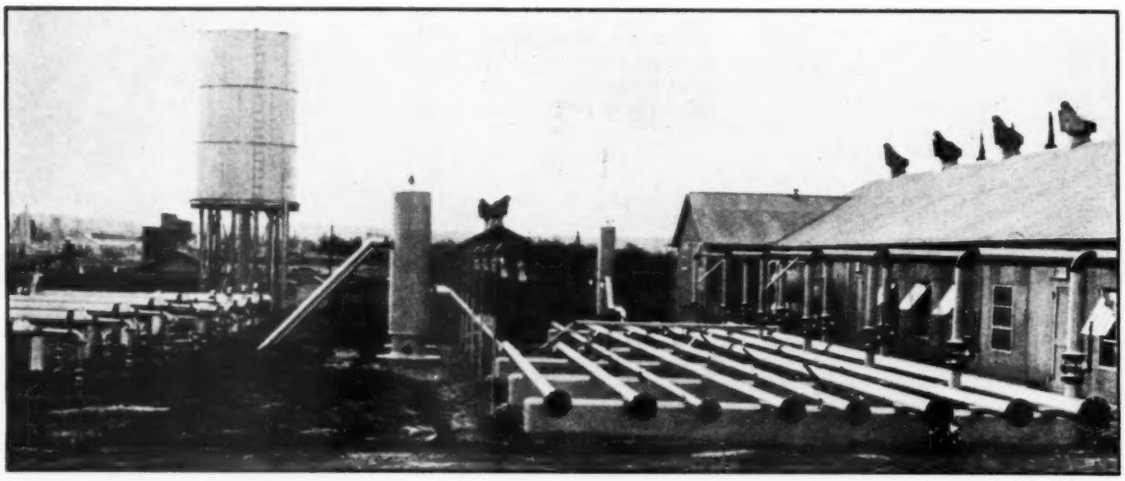
Gas is plentiful in the Fitts pool. That which comes with the oil is gathered and sent to the Carter Oil Co.'s gasoline plant nearby, where the gasoline is extracted, the residue then being returned to the owner. Perhaps half of the dry product returned to E. H. Moore, Inc., is used for drilling fuel and for completing wells by the pressure-drilling method. The remainder, about 10,000,000 feet is economically like water during a spring freshet, it has no commercial value since it cannot be used, stored, or sold. As a consequence, a large quantity is being vented to the air and allowed to go to waste. In addition to the residue gas there are several gas wells on the property which constitute a reserve from which fuel may be procured when the quantity coming with the oil does not meet the demands of the plant. Should all sources of supply become inadequate, oil may be used for fuel, as convertible diesel engines are being installed.

The field is well watered, since the creeks which traverse it are fed by springs. During the drouth of the summer of 1936 little difficulty was experienced in obtaining all of the water required by the 12 or 15 rotary drilling rigs in operation on the company's leases and for other purposes. While this water is hard, it is reasonably satisfactory for use in boilers and for cooling water.

The resources of the Fitts pool are well known. A number of productive sands exist, and time only will answer the question as to exactly how many wells will be drilled on the company's property. It was thought possible that much water might be handled during the life of the field. However, the source and effectiveness of the water drive was and still is a matter of speculation. It seems reasonable to think that many wells will be free from water intrusion and that they will be pumped for 15 or 20 years.

During the first half of the year of 1936, 12 of the company's wells located in the west and north central sections of the field began to make water in varying quantities, and 7 additional wells similarly located on the structure were expected to make water soon. It was evident that it would be only a matter of a short time until these wells must be put on the pump, and judging from experience elsewhere, it seemed reasonable to expect that water encroachment would increase, just how rapidly and widespread no one can say. It was thought that wells unaffected by water intrusion would flow naturally until the early part of 1938, providing the rate of withdrawal is kept at the existing level; but obviously, sooner or later an artificial lift of some kind must be applied to all of the wells.

Before investigating the mehanical phases of the problem, consideration was given to the factors on which any plan of procedure must be based. These included the probable natural flowing life of the wells, economic life of the property as determined by the probable recoveries, proration, and the methods of taking potentials. The flowing life of wells has a decided bearing on the problem because it will affect the build-up of the pumping load which must be handled.

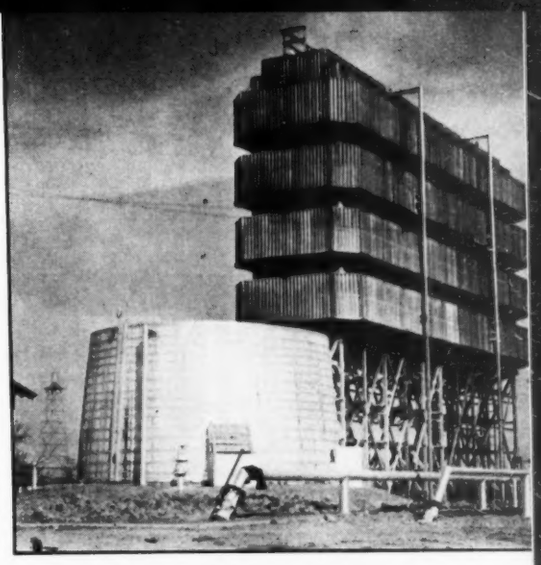


Heat exchangers and tankage for storing treated water to be used in the engines are shown on the left. Shown in the right foreground is the piping for distributing gas at different pressures

The major factors which influenced the recommendation of equipment to be used for pumping are summed up as follows:

1. Probable well loads.
   (a) Normal pumping loads.
   (b) Abnormal pumping loads.
   (c) Influence of well allowables and artificial lift potentials.
   (d) Water encroachment.
2. Well servicing methods.
   (a) Clean-out operations.
   (b) Servicing wells.
3. Type of power.
   (a) Gas engines. (1) Maintenance expense. (2) Down time—loss of production.
   (b) Electric motor. (1) Comparatice cost of

in Fitts Favorable Electric Power



Tower and 1,600-bbl. raw-water tank for cooling and storing raw water used in cooling the gas and jacket water

maintenance. (2) Down time—loss of production.

4. Comparative cost of purchased and generated electric power.

On the assumption that the average production per well will be 400 bbls. of fluid, the average lift 4,000 feet and the efficiency from prime mover to stock tank 50 per cent, the average well load was calculated to be 20 h.p. The types of equipment considered for comparison in the final analysis were selected with respect to the horsepower requirements, the type of prime mover and the period of service demanded. It is thought that the amount of fluid to be pumped on wells making water will be about the same as that produced by wells in the Seminole area. In anticipation of proration rules requiring the establishment of potentials by pumping the capacity of a 2½-inch pump operated at speeds up to 24 s.p.m. with a polished-rod stroke of 72 inches was taken as a limit.

Portable units for both the servicing of pumping equipment and the cleaning out operations were recommended. After analyzing the operating and cost reports on a number of properties where both gas engines and electric motors have been used or are in operation the report contains this language, "We conclude, from the data presented, that the electric motor is mechanically a more satisfactory source of power than the gas engine and we are justified in selecting this style of power providing the cost of installation and operation is comparable to that of the gas engine."

The field, subject to comparative study, was narrowed by the conclusion that the single-cylinder slow-speed gas engine is the most desirable type of prime mover, aside from the electric motor, and that the conventional chain-driven or belted rig-front is most suitable for use with this type of gas engine. As a result of this conclusion, comparison was made of the single-cylinder, gas-engine driven steel rig-front and the electric motor powered geared pumping unit. The cost of the former per well was estimated to be $8,950 and of the latter $7,350. This last sum included the cost of that portion of the cost of a generator plant and transmission line chargeable to a well.

In estimating the amount of the investment it is necessary to make in the power plant, it was assumed that the investment will be proportional to the average horsepower requirements of the wells. This was taken as 25 h.p. of plant capacity per well. A unit figure of $120 per kilowatt of generating capacity, since found to be ample was used as a basis for the probable plant cost. The build-up in the plant load for pumping 140 wells was estimated to be such that the load will be within the limits set by the following plan: Six hundred k.w. capacity for the initial installation, 5 months later 1,000 k.w. added, 13 months later 450 k.w., and 19 months later 500 k.w.

On the basis of the estimates of the investment involved in this plan of expansion the cost of energy throughout a three-year period was estimated to be less than that incurred under the best rate offered by a public service company. It is believed that the investment can be retired in seven years and that after this is done energy can be produced for 3 mills per k.w.h., thus making it possible to show a substantial earning in the years which follow. The estimates given are based on free gas to the plant.

In conclusion the report states that: "In view of the preceding study, we are led to the following conclusions:

"1. That a self-contained geared pumping unit of heavy design will be most economical to use.

"2. That from a mechanical standpoint electric power is the most desirable form of power for oil well pumping.

"3. That the use of electric power will prove both practicable and economical at Fitts.

"4. That the necessary investment for building a generating plant and transmission lines is justified."

The report also recommends:

"1. That we install the first unit of an electric generating plant at such time as the number of wells to be pumped justifies.

"2. That pending completion of electric generating and transmission facilities such pumping installations as are required be powered with high-speed multiple-cylinder gas engines.

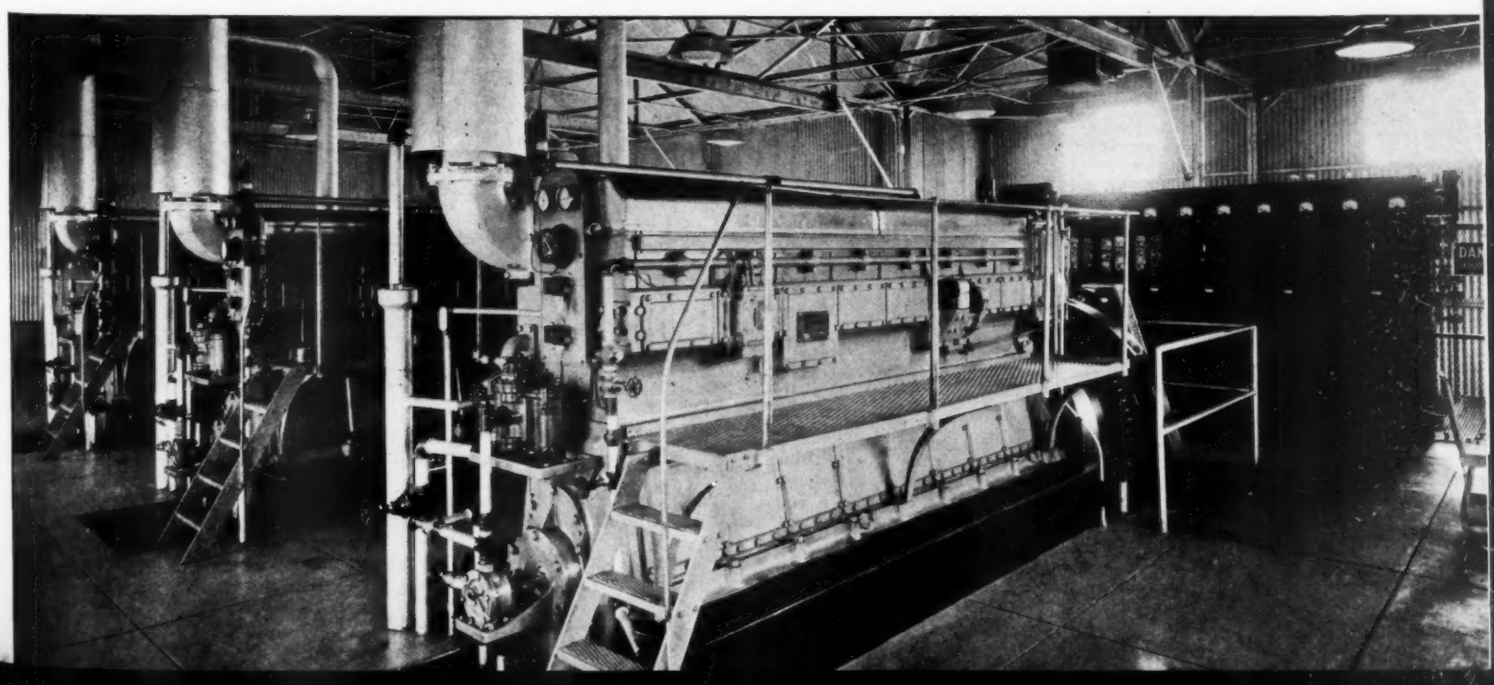
"3. That future pumping installations be self-contained geared units of adequate capacity to withstand high-speed pumping tests through 2½-inch tubing.

"4. That the high-speed multiple-cylinder gas engines, placed on early wells, be later transferred to outlying leases to serve as a permanent source of power for the pumping of those wells."

In accordance with the program outlined above and adopted by the management, it was decided to proceed with the plans for a central electrical generating plant to be operated in conjunction with an existing gas compressor station. The site is on the Cradduck lease, 2 miles east of Fittstown in the NW SW section 29, Township 2, Range 7e. All the leases it was planned at that time to serve are within less than 2 miles of the plant location.

The first thing to decide was the kind, speed and capacity of the engines to be installed. Obviously gas engines should be used and as a precaution against a possible shortage of gas during the last years

The three 400-h.p., 400 r.p.m. engines now installed at Moore's Fitts pool electric plant. Additional units are to be added later this year



"THE REST IS EASY!"

AFTER battling rain, muck and mud, four trucks finally got 600 sacks of 'Incor' Cement to a well in the Hastings, Texas field. "Glad we're using 'Incor'," said a weary roughneck, "because the rest of the job'll be easy." And it was.

At 3:10 A. M., the 600 sacks of 'Incor' were pumped down 1714 feet, through the 10-inch casing, into the 11⅝-inch hole. As usual, there wasn't a hitch—'Incor' mixed readily in a slurry averaging 15.6 lbs. in less than 15 minutes. Then, mud pumps were started and cement pumped into position, with no undue rise in pressures.

No Soft Spots in This Plug!

Forty-eight hours later, the plug was drilled through, showing 'Incor's usual hardness, no soft spots—a typical 'Incor' job. One thing less to worry about when you use 'Incor'—because 'Incor' pumps readily, even at 16 lbs., stays gel-like to keep out mud, hardens rapidly, gives you a strong, dense, long-life shut-off.

Yet 'Incor' is "timed" to set normally, allowing you ample leeway to run cement into place. 'Starcor,' too, has these special properties, only it is timed for use in deep, hot holes. Use 'Incor'* or 'Starcor'* next time, depending on the job. Lone Star Cement Corporation, Dallas . . . Houston. *Reg. U. S. Pat. Off.

TWO PORTLAND CEMENTS—BOTH MADE FOR OIL WELLS

Properties	'Incor'	'Starcor'
Greater pumpability	Free pumping at 15 to 16 lbs.	
Gel-like body	Reduces mud contamination; doesn't settle out	
Controlled setting time	Normal UNDER 140°	Normal OVER 140°
High early strength	Drill out 1 to 2 days	Drill out 2 to 3 days
Sulphate-water resistance	Good	Exceptional sulphate resistance

LONE STAR CEMENT CORPORATION

of the field it seemed wise to install engines which may be converted to diesel fuel.

There is much to be said concerning the advantages of using the low-speed engine. However, it is the belief of the company's engineers that the trend for applications of this nature is to use higher speed engines, and in line with this it was decided to use 400 r.p.m. units. It may be said that the economic life of an oil field is usually less than the life expected of units of the type installed, and the matter of salvaging them with as little loss as possible and moving them to other fields is one of great importance. Obviously a unit of the weight chosen can be dismantled and moved with a greater per cent recovery than is possible with the heavier types.

In selecting the size of the engine a comparison was made of the coordination existing between the capacity of the engines available and that of the rating of standard generators. A tabulation is given in Table 1 which illustrates the method used. It may be observed from a study of this table that the utilization of the full capacity of both engine and generator depends on the power factor of the load. The power factor obtaining on a plant carrying a strictly pumping load is low unless remedial apparatus is installed, and it is probably not profitable to plan to improve it to a point much above 85 per cent. In line with this analysis 400-h.p. engines direct connected to 312 k.v.a. generators were selected.

TABLE 1 — COORDINATION OF ENGINE AND GENERATOR CAPACITY

Engine No.	Engine rating expressed in HP	Engine rating expressed in KW	(Assume 92% eff. of generator) Losses in gen.	Power to drive exciter	Power of engine available KW	Capacity of gen. in KVA	Power factor when engine is loaded
1	300	224	18 KW	5.5	200.5	250	80%
2	325	243	19 KW	6	218.0	250	87%
3	360	269	21 KW	6.5	241.5	312	77%
4	390	291	23 KW	6.5	261.5	312	83.6%
5	400	298	24 KW	7	267.0	312	85.6%
6	520	389	31 KW	8	350	438	80.7%
7	520	389	32 KW	9	348	500	70.0%

Initial Installation

The initial installation consists of three 400-h.p., 400 r.p.m., 11½-inch by 13½-inch, 8-cylinder, 4-cycle full diesel convertible Cooper-Bessemer engines equipped to operate on natural gas. They have high tension Bosch magneto ignition and the weight of each is about 35,000 pounds. The fuel consumption per brake horsepower is guaranteed not to exceed 10 cubic feet on 1,000 B.t.u. gas.

The engines are direct connected to 312 k.v.a. 4,160-volt 3-phase 60-cycle General Electric generators, normally rated at 250 k.w. at 80 per cent power factor. They are equipped with amortisseur windings as an aid to parallel operation. A fourth wire, the neutral, is brought out for grounding. The exciters are shunt wound rated at 7.5 k.w. 125 volts, 1,750 r.p.m. High-speed belted exciters were used because they respond more rapidly to the voltage regulators than would 400 r.p.m. machines direct connected to the main generators. No provisions have been made for operating them in parallel. They are mounted on supports attached to the top of the generator outboard bearing pedestal and are driven by V-belts from a sheave attached to the main shaft.

The voltage of the system was chosen by reason of the compactness of the area it was planned to serve and the ease with which a 4,160-volt system with grounded neutral may be protected from lightning disturbances. It is believed that this relatively low voltage is ample for distributing power over the short lines serving the leases, and that the system is as ample a one as can be devised. Standard 2,400-volt transformers are used on all power circuits, and 4,160-, 120- and 240-volt transformers on the lighting circuits serving the plant and camp.

Cooling System

As was said above, the plant is operated in conjunction with a compressor station. The cooling system for the electric plant has been combined with the existing system of the compressor plant. As found, raw water for cooling the compressors and the gas was taken from a hot well by pumps belted to compressors and sent through a circuit consisting of the water jackets, heat exchangers, cooling tower and storage tank back to the hot well. The water level in the latter was kept constant by means of a float operated valve which controlled the flow of water from the storage tank to the well.

In the new cooling system, which serves the original compressor plant, the electric plant, and a three-unit addition to the compressor plant, raw water is used for cooling the gas and the jacket water. However, treated water is used for the engine and compressor jackets themselves. The apparatus involved in the raw water circuit consists of a 6-inch Goulds centrifugal pump driven by a 50-h.p., 440-volt, 1,750 r.p.m., 3-phase 60-cycle squirrel-cage motor; a battery of four 14-inch by 156-inch Alco jacket water heat exchangers; a second battery of five 10-inch by 156-inch Alco gas heat exchangers; a Model 10-A-12 Fluor cooling tower and a 1,600-bbl. storage tank.

The equipment used in the jacket-water system includes a 6-inch centrifugal pump driven by a 30-h.p., 1,750 r.p.m. motor of the same type as that used on the raw water pump. Treated water is taken from a hot well and forced through the jacket water heat exchangers into a 750-bbl. elevated tank. From this tank the cooled water flows by gravity through the jackets of the engines and compressors back to the hot well. The water is treated by a zeolite water softener which has a capacity of 18 gallons per minute. A third pump similarly equipped to the first one described is so connected to the manifolding of the raw and treated water pumps that it may be used as a reserve for either of the other two.

The switchboard was manufactured by General Electric Co. Each generating unit is provided with an individual panel on which the apparatus used to control the A.C. generator and its exciter is mounted. The chief items associated with a panel are the disconnect switches, Type F.K. 33 manually operated oil circuit-breaker, a Type G D.A., a-voltage regulator, an ammeter and a wattmeter. This type of regulator makes it possible to eliminate the generator field rheostat. Wattmeters have a double function. On a board controlling a generator, they make it possible to divide the load equally among a group of generators operating in parallel and they show when a generator is running as a motor and driving a crippled engine. The latter action occurs more frequently than the average operator will admit.

A synchroscope, two voltmeters, a power factor meter and a frequency meter are mounted on a swinging panel at the end of the board. The engines are all provided with governor motors, thus making it possible for an operator to adjust the speed of an incoming unit from his position at the board. This device and the synchrosope makes the synchronizing operation very easy. In case the synchroscope is out of order lamps are provided for use in its place.

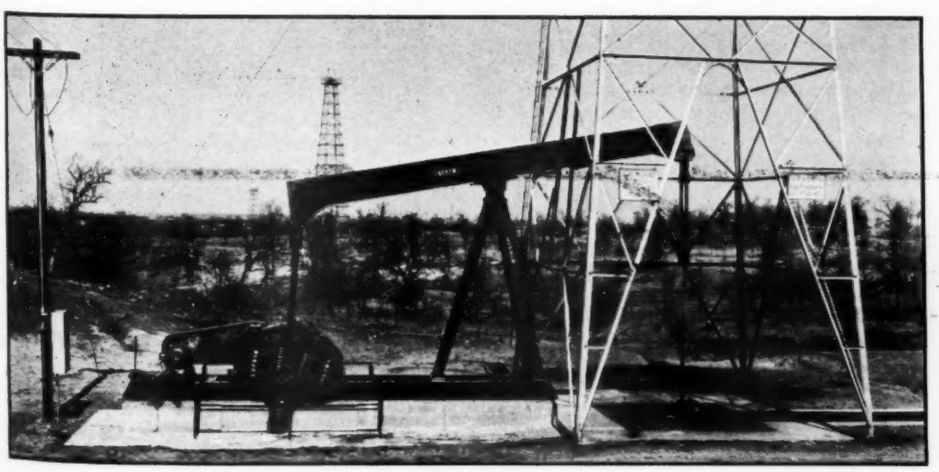
Circuit Equipment

Energy from the buses is distributed by means of two double-circuit feeder panels. Each circuit includes a set of disconnect switches, a Type FK-33 automatic oil circuit-breaker, an ammeter and a watthour meter. The circuit breakers are under the control of 3 Type I.A.C. induction time overcurrent relays. These relays have an inverse time characteristic, that is, the greater the overload, the less the time required for them to act.

It was stated above that the oil circuit-breakers in the generator circuits are manually operated while those in the feeders are automatic. It is not the intention to have the generators trip out in case of a fault on one of the feeders of the transmission system and thus cause the plant to drop the entire load. The breaker on the feeder affected is intended to open the local circuit. One of the four feeder-circuits supplies energy for house service, that is for the load about the power plant, a second goes to the west end of the field, a third to the north end, and the fourth to the east side.

The areas to be served are known in company language as "the Wirick block" and "outside leases." Energy supplied to the latter must be metered so that in laying out the territory to be served from a single substation this factor was taken into consideration and meters were installed at some of the substations. In general the area served from a substation consists of six 10-acre locations. Each of these may have one, two or three wells drilled on it. In making calculations for the distribution lines on a tract on which a number of wells are to be served the old rule was encountered: That it is uneconomical to run a 480-volt line more than one-quarter mile since the principle that "doubling the size of a line halves the voltage drop" is not true when dealing with alternating current problems.

The substations consist of three 50, 75, or 100



Small electric motor driving a geared pumping unit on a well in the Fitts pool

k.v.a. 2,400-, 480-, 240-volt, single-phase Type SP Westinghouse transformers set on a concrete pad, and connected to the line in the conventional way. The primaries are connected in star with the neutral and transformer cases grounded while the secondaries are connected in delta, thus impressing 480 volts on the lines feeding the wells. Each transformer has two 5 per cent taps so that the ratios of transformation are 5, 4.75 and 4.5 to 1.

The insulation of the secondary bushings on the transformers is such that a lightning discharge will pass over the surface to the case and to the ground without injury to the winding. The primaries are protected by Deion lightning arresters, located within the case. As an additional precaution each of the 4,160-volt feeders is protected by two sets of lightning arresters, one set being located near the plant, and a second at some distance from it. The equipment in the generating plant is protected from lightning by a suitable capacitor connected to the buses.

The primary lines consist of No. 1 H.D. bare stranded copper wire carried on standard N.E.M.A. 4-pin treated yellow pine crossarms. The wires have an equivalent spacing of 18.5 inches. The lines are supported on 35-foot 8-pound treated yellow pine poles having a minimum top diameter of 6 inches. Where the secondaries follow the primary lines they are underbuilt, otherwise they are carried on 30-foot poles of the same type used on the primaries. The secondary lines vary in size all the way from No. 4 M.D.H. for one well to No. 00 for a group of wells.

The initial program called for the building of 17 substations. Later the east feeder circuit was extended so as to serve an area in the northeastern part of the field about 4 miles from the plant. As now outlined, a total of approximately 23 substations will be built. Since the first leases were electrified production in the Hunton lime has been developed in the west side of the field, thus making it necessary to prepare to serve an additional number of twin locations. In the north central part of the field the Cromwell sand constitutes a triple threat. Fortunately the lines and substations are large so that it is not believed that major changes will be necessary as a result of these not unwelcome productive area extensions.

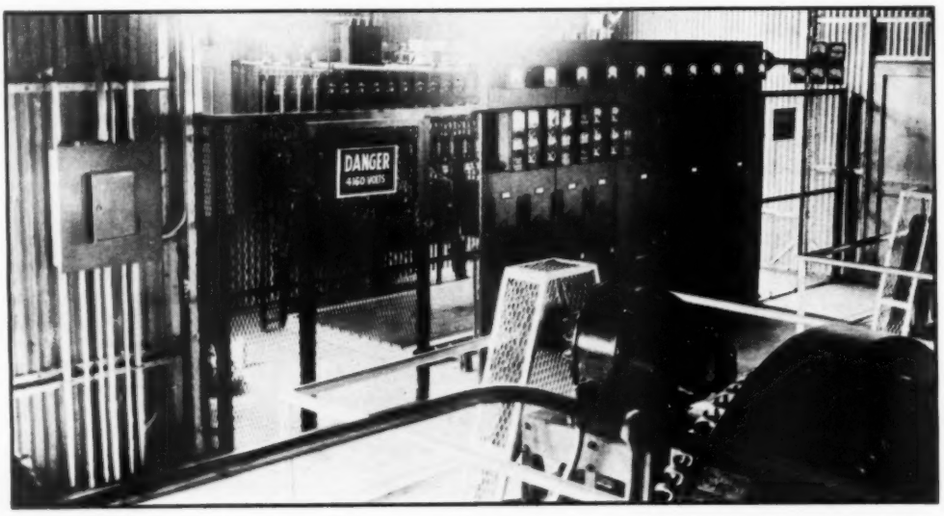
Future Construction Program

As was stated elsewhere, it was decided to equip all wells with heavy, geared pumping units. At this time 31 units have been set and 20 wells are pumping. The construction program adopted by the management calls for the setting of 12 units per month during the coming spring and summer months. Motors will be set as soon as wells reach the stage where they must be agitated in order for them to make their allowable.

It is believed by the company's engineers that 15-, 25- and 40-h.p. motors will cover the range of demands for power likely to be encountered. Constant speed, single rated, 1,200 r.p.m., 440-volt, 3-phase 60-cycle high-reactance motors are in use. These motors are splash-proof, have sleeve bearings, develop normal starting torque when thrown across the line, and the starting current is low. The average load on the heaviest well encountered thus far as determined by a 16-day test with a watthour meter is 15.4 k.w.

It appears that it is more economical to use three sizes of motors than to use a 40-h.p. motor having a triple rating. When a demand on the plant is reached such that a low power factor is a matter of concern the difference in the cost of the two types of motors and their control may be invested in capacitors and the same results obtained. The power factor of the load now obtaining averages about 65 per cent.

The control apparatus for the pumping motors is located in a weatherproof steel cabinet attached to a pole set a few feet from the gear units. It includes a Type 11-204 Westinghouse across the line magnetic starter, push-button station and a set of Type LV lightning arresters. The latter are enclosed in a metal container so that in case of a violent failure due to a heavy lightning discharge the pieces of the arresters will not be scattered through the box. The cabinet has sufficient space inside for mounting a watthour meter, a small air-cooled transformer for supplying energy for rig lighting and a Crouse-Hinds receptacle of sufficient capacity for plugging in the mains of a portable rod pulling motor.



Switchboard with oil circuit-breakers shown in rear

Method of Metering Current

The electrical energy used to pump the wells located off of the Wirick block is metered either at the substations or at the wells. In a few cases the leases are small and it is more economical to install meters on the individual wells. The watthour meters used on the substations are 5 ampere, 440-volt of the 2-element 3-wire type with 300/5 current transformers. These, together with the lightning arresters similar to those used to protect the control equipment and the motors at the wells are mounted in metal cabinets on one of the poles at the substation. The well meters are rated at 50 amperes 440 volts and are of a similar type. All meters have an attachment for measuring the maximum demand for the month.

While portable electrical servicing units have proven themselves to be very satisfactory elsewhere, it is not the intention to use them in conjunction with this installation. It is recognized that the demand of a pulling machine on a system frequently upsets the voltage equilibrium on a plant of limited capacity to such an extent that it becomes a source of much annoyance. Gasoline and diesel tractor servicing units have been found to be very satisfactory and will be the standard.

The pumps at the treating plants are being electrified and the batteries lighted. A motor operated pick-up pump mounted on a trailer was put in service a few days ago. A 400-foot tirex cable makes it possible to reach practically any point on a lease with this pump and it has demonstrated its worth in picking up spilled oil, pumping out cellars and on similar work.

Electrical energy for use in the homes of the men is supplied without cost to all who live in company houses. Employes who have built homes within reach of the company lines may obtain current on the same basis providing they get together and purchase a transformer and the necessary material for building the lines required to serve their group. However, only authorized company workmen are permitted to hang transformers and make connections to company lines and a rigid inspection is made of the houses before service is established.

A fourth generator-unit will be installed about June 1 and four others some time in August or September. As was stated before, the company plans include the installation of 12 pumping units per month. Units and motors are on order in a sufficient quantity to carry out this program. The generator units ordered are duplicates of the three now in operation so that when the extensions planned are complete the capacity of the plant will be 2,000 k.w. at 80 per cent power factor. The average load on the plant at this time is about 200 k.w. and the power factor obtaining is 65 per cent. This is equivalent to the full load rating in k.v.a. of one generator. It is shown in the table that each engine can carry a load of 267 k.w. Capacitors are on order for increasing the power factor to 85.6 per cent, the value at which the capacity of the units will be 267 k.w.

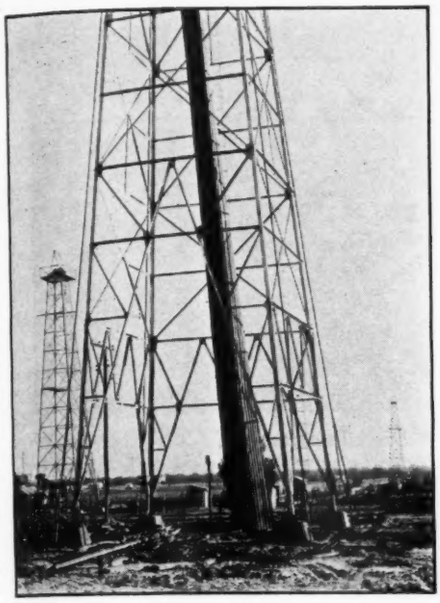
Aircraft Developments Will Be Discussed at S.A.E. Meeting

Startling prophecies of aircraft and aero engine developments throughout the world in the next few years will be given by A. H. R. Fedden, engineering executive of Bristol Aeroplane Co., Ltd., during the week of May 4 to 9 when the annual summer meeting of the Society of Automotive Engineers take place at White Sulphur Springs, W. Va. More than 30 motor fuel automobile and aircraft engine experts will read technical papers in their respective fields. That a passenger trailer imposes a load on the automobile equivalent to a 20 passenger bus is a contention of James H. Booth, Buick Motor Co., who will point out the necessity for trailer and car designers to get together before serious difficulties arise which will get both into trouble.

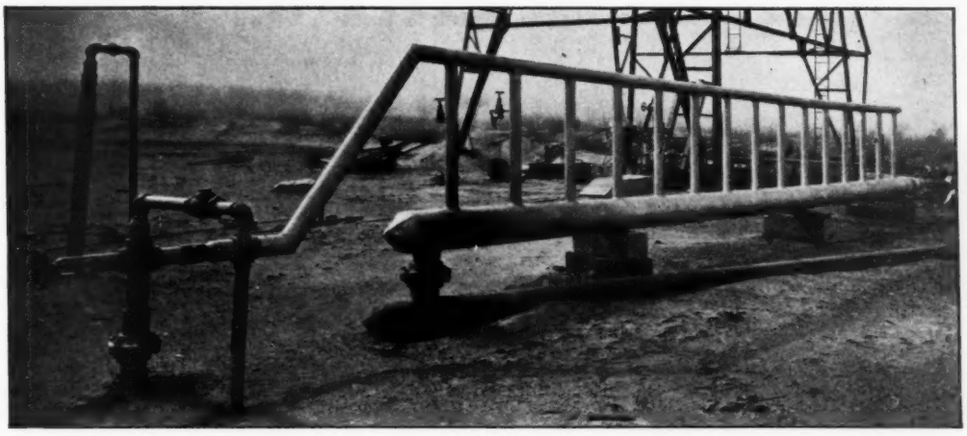
What elements in oil make good lubricants continues to baffle experts, but H. A. Everett, Pennsylvania State College; C. M. Larson, Sinclair Refining Co.; G. L. Neely, research engineer, Standard Oil Co., California, and W. A. Witham, Gleason Works, will throw new light on the subject as results of researches recently completed in the various laboratories.

OPERATING IDEAS

Anchor Wires to Foundation



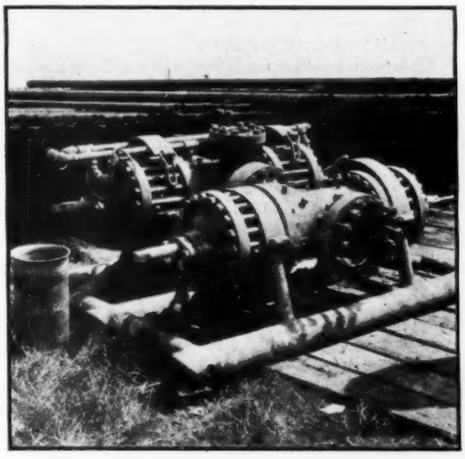
Townlot drilling offers many problems to contractors, among these being the problem of having sufficient area in which to run guy-wires. In the Talco field one well was drilled 5 feet from a main highway, thus the contractor was faced with the problem of guying the derrick without obstructing the roadway. This was solved, as is shown in the accompanying photograph, by running the guy-wires from the top of the derrick to the corner foundation blocks. The bracing thus gained was sufficiently strong to enable the contractor to drill a 4,300-foot hole without interruption and without the guy-wire weakening.



Water Knockout on Kansas Line

Some wells in the Haven field in Kansas make a large volume of water, and one operator has made a knockout from salvage pipe. It extends about 40 feet from the well, the oil entering the top section. As the water settles out it falls to the lower section and is taken off the bottom.

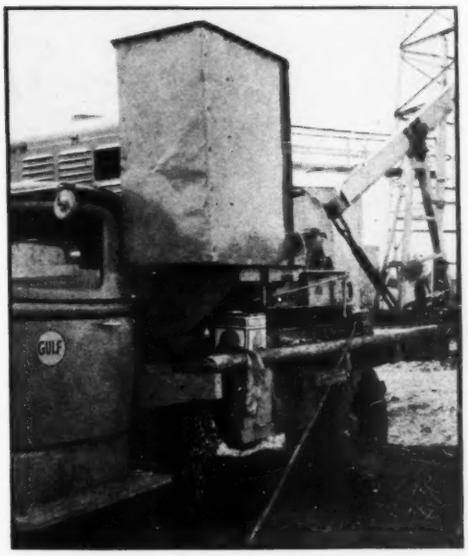
Skid for Blowout-Preventer



A close study of conditions encountered in moving rotary equipment from warehouse to location or from one location to another has developed a very comprehensive schedule of operations. The minimum of time and effort is expended in making such moves and to facilitate this work numerous types of portable skids have been developed. This picture shows a pipe skid made to conveniently handle the conventional type blowout-preventers insuring the maximum protection to all exposed parts while it is being moved.

Pumping Four Wells With One Reduction Gear

This installation in the Olympic pool, Wewoka, Oklahoma, eliminates the standard rig front and can be used on 1,700- to 1,800-foot wells. A pendulum is connected to the rods, with the power coming from a 35-h.p. gas engine. By using a back-side crank four more wells can be pumped.



Steel Cage on Hoist

One large oil company operating several rod and tubing hoists in western Kansas has mounted steel cages on its trucks in which the operator sits while operating the pulling engine. The cage is open at the top so as not to obstruct the view of the man on the tubing board. Also the cage has an opening for the radiator of the hoisting engine thus allowing warm air to circulate in the cage and keeping the operator comfortable even in the coldest weather. The cage can be removed from the truck during summer months if desired.

Double-Jointing Yard Operated on Cities Service Pipe Line

By PAUL REED

Double-jointing to get the more convenient 40-foot joints and bevelling to prepare pipe for welding, together with other operations involved in putting old pipe in shape for relaying, all require carefully planned pipe yard organization. The operation of the Cities Service Co.'s portable pipe yard, in the vicinity of the right of way between Fitts and Seminole is an example of how this work can be done, according to modern pipe line practice, with the smoothness of an assembly line in an automobile factory. The problems connected with maintaining a continuous output with efficiency resemble the problems of manufacturing.

When plans were made for building the Cities Service Co.'s 48-mile line of 12-inch pipe from the Carter Oil Co.'s gasoline plant in the Fitts pool to connect with the 16-inch line of the Cities Service system at Seminole, it was decided to get the pipe from old lines and prepare it for laying in a portable pipe yard to be located at three different points as the work progressed. During the first three weeks of March, 20 miles of pipe have passed through the operations in the yard while it has been functioning a few miles east of Ada. After two days required for moving, the yard will be operating at Sasakwa during most of April where another 20 miles of pipe will be handled. For the completion of the line, the yard will be located at Seminole.

The new line will take between 15,000,000 and 20,000,000 feet of residue gas into the line at 400 pounds pressure and will deliver it into the Cities Service system at Seminole where the pressure is now about 200 pounds, but may be reduced by changes to be made in the operation of the Drumright compressor station.

The pipe comes from two old lines, constructed of plain-end pipe with Dresser couplings. The first 36 miles of pipe are coming from a line laid in 1916 between Tallant, Okla., and Caney, Kans., to deliver Osage gas to the American Smelter Co. More than 90 per cent of the line is being recovered. Most of the bad joints are discarded as the line is taken up. Less than 1 per cent has gone to the junk pile after inspection at the portable yard. The good condition of the pipe is attributed to the favorable soil conditions in the country where it was laid.

Portable pipe yard placed on hillside to get the benefit of gravity in moving pipe down the racks

In setting up this portable pipe yard near Ada, a hillside was picked for a location in order to take advantage of the use of gravity in rolling joints from one stage in the operation to the next. The company had had previous experience with this kind of work while handling 20 miles of 12-inch pipe at Cambridge, Kans., and handling 20 miles of 10-inch pipe at Winfield, Kans. The principal change, in the scheme used, is the addition of quick cleaning in cleaning machines in order to assist in the inspection of the pipe.

Lining up pipe in pipe clamps, tack welding, and roll welding

Therefore, the portable yard for the Fitts-Seminole line is considered a two-rack yard. The rack is the unit in which is completed the series of operations performed. Each rack is of electric welded construction and consists of a succession of level and inclined skids. The plan of the yard can probably be best indicated by describing what is done to a joint of old 20-foot pipe as it passes through the various operations.

Trucks delivering pipe unload at the top of the hill. From the pile of incoming pipe, joints are rolled up slightly inclined skids to level skids long enough to hold four joints easily. At the downhill side of these skids, a joint is picked up and put into the cleaning machines by two laborers and the cleaning machine operator. As it emerges from the other side of the cleaning machine it is picked up by two inspectors who carry it to a set of skids pointing down hill. Two sets of skids, running parallel to each other, hold two sets of 20-foot joints during cutting, so that after being rolled to the tack welders they are readily lined up for welding to form a 40-foot joint.

After the joint has been placed on either one of the two sets of skids, the inspectors pound it while looking for holes which require spot welding; the inspectors also pound the ends of the joint inside and out in order to make it easier for the cutter's helper to fit the bevelling machine on the pipe. Directly in front of the inspectors the skids are level for a distance long enough to hold nine joints without crowding. From these level skids, joints are rolled down slightly inclined skids to level skids long enough to hold 18 joints. Soon after the joint reaches these level skids, the cutter's helper adjusts the beveling machine and after the cutter completes beveling, two 20-foot joints are lined up in a pipe clamp for tack-welding; after the roll weld is completed at the end of the skids, the joint goes to the pile of 40-foot joints ready for shipment to the right of way.

Joint of 20-foot pipe being placed in cleaning machine, while inspectors are taking the cleaned joint to the skids beyond the cleaning machine

Altogether, 40 men are employed in operating this yard, which is organized to handle 6,000 feet in an eight-hour day. The quality of welding is tested by pulling coupons on one weld of each welder every day. Spot welding is done with two Lincoln electric generators.

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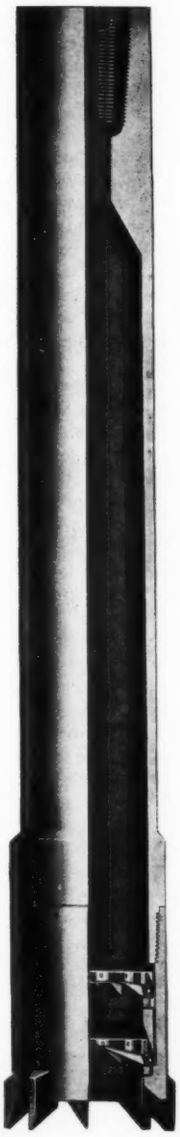

That's the efficient way to recover junk of all kinds from a well .... It's quick, simple, and above all, POSITIVE!

The Globe Basket Bit is almost human in action, first guiding the junk to center of hole and then forcing it on up into the barrel as it cuts a full size core out of bottom. The catchers are free to revolve within the head, preventing damage to core, yet they quickly sever and retain the core when starting out of the hole, trapping the junk within the barrel where it cannot possibly escape. Because of its special construction the Basket Bit cuts a core almost as large as the hole itself and can recover practically anything that falls to bottom. Furthermore, the action of the bit in cutting out a section of the hole assures you're getting *ALL* the junk—even those small pieces which might be ground into the formation on bottom.

The Globe Basket Bit is also used very successfully for hole straightening operations. Its design enables it to cut quickly into the walls where the hole starts off vertical and, once on its new course, it will not slide back into the old hole. This application and complete information on fishing and coring with the Globe Basket Bit are covered in the Basket Bit Bulletin which is yours for the asking. Write for it today!

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Chemical Clean-Out of Oil Wells in California

By M. W. MORRIS
Standard Oil Co. of California, Taft, Calif.

Acidization has been successfully employed for some years in the limestone and Dolomitic formations of the Mid-Continent and eastern fields. This type of rock material is soluble in acid and it has been found that drainage channels can be extended and reservoir permeability increased by forcing acid into the pores of the formation.

The Siliceous sands which comprise the main productive formations in California are not readily reactive with acids and a chemical treatment has not been developed commercially which will increase the fundamental permeability of these productive sands. Chemical treatment to increase well productivity in California has been confined to date to the cleaning out of material which obstructs the entrance of production by plugging perforations or the faces of sand. Substances which have been effectively removed from oil wells with consequent increase in production are: (1) Mud sheaths—formed during drilling or redrilling operations; (2) carbonate scale—deposited from well water; and (3) waxy-asphaltic residues — deposited by the crude oil. The importance of this work is indicated by the fact that during the past 12 months approximately 500 wells were chemically treated in California at an estimated total cost of $400,000 for chemicals, labor, and all the miscellaneous materials that enter into the chemical treatment of wells.

It is axiomatic that, before well productivity can be increased by chemical treatment, there must be production obstructed from the hole by a substance or substances which can be effectively broken down by chemical action. To secure results it is essential that an accurate diagnosis be made as to the nature of the material responsible for the subnormal production, so that the proper chemical may be applied in treating the well. Detailed review of chemical clean-out work indicates that unsatisfactory results were obtained at a number of wells because either the chemicals were unsuited for the job or treatment of the well was not justified.

The time element is of great importance in chemical reactions and it is essential that the job be planned so that the chemical solution will be maintained for an adequate time in contact with the material to be removed. To prevent damage to the well's productivity, it is vital that the chemicals employed be such that they will not react to form organic sludges or inorganic precipitates with the hydrocarbons and waters existing in the well.

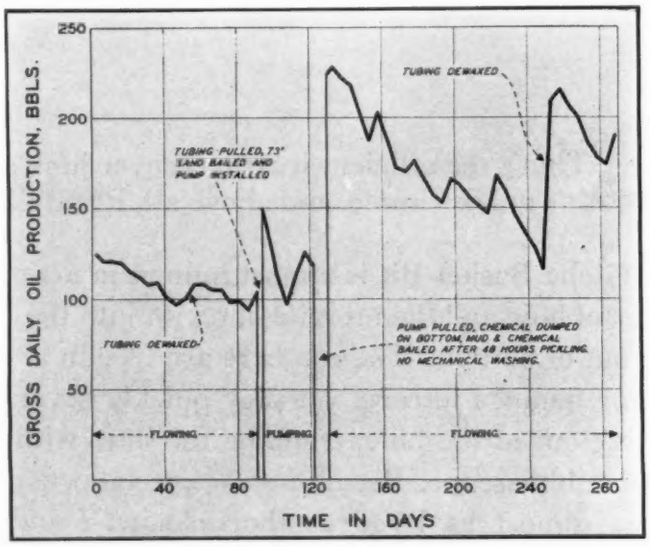

Fig. 1—Increase in productivity after chemical treatment, without mechanical washing for removal of mud sheath, Fruitvale field

Examination of cores and laboratory tests have demonstrated that the actual penetration of mud solids into sands is confined to a very small fraction of an inch[1, 2, 3]. It is now generally agreed that the penetration of productive sands by mud solids is so slight that this condition alone is seldom responsible for losses of production.

Repeated laboratory tests have shown that mud cake built up on the face of a sand can be readily dislodged by reversing the direction of pressure application. The pressure required in the laboratory to back the cake off a sand is only a small fraction (frequently less than 1 per cent) of the differential pressure under which it was formed. Rubel and Wilde[1] suggest that the difficulty encountered in removing mud sheaths and exposing sand faces in oil wells is due to the support afforded by the perforated pipe. This explanation fits the known facts and indicates that disintegration of the mud sheath in wells is more difficult where: (1) The mud cake is thick as the result of use of mud with poor colloidal properties, and (2) well pipe is perforated with a limited number of rows or with slots of small mesh.

Flow from the higher pressure sands may be so violent as to completely disintegrate the mud sheath behind the pipe after the well is put on production. However, the natural forces in wells completed in lower pressure sands are often inadequate to effect a breakdown of the mud cake. It is probable that under these conditions the sheath may rupture opposite a portion of the perforations with the establishment of limited channels for the entry of production.

Mechanical agitation supplied by up and down swabbing of perforations and various types of pressure and vacuum washers has been helpful in breaking down and removing mud sheaths from behind well pipe[3, 4]. Engineers have been working for some time on the development of chemical methods of removing mud sheaths, but it has been only in the past several years that the technique has been carried to the point where commercial success is attainable. It is of interest to note that of the 500 chemical clean-out treatments in California during the past year, approximately 450 were performed for the purpose of removing mud sheaths.

Several California service companies are equipped to treat wells chemically for mud cake removal. All of the companies but two have disclosed the composition and proportions of the chemical solutions employed in their processes. Table 1 shows the general nature of the chemical substances which are being used at this

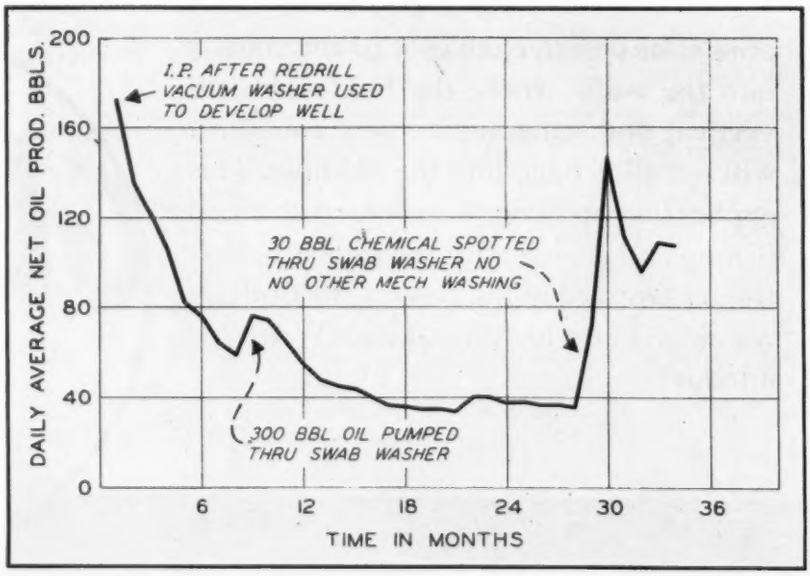

Fig. 2—Effect of chemical treatments for mud-sheath removal, Fruitvale field. Perforations mechanically washed with oil prior to chemical clean-out

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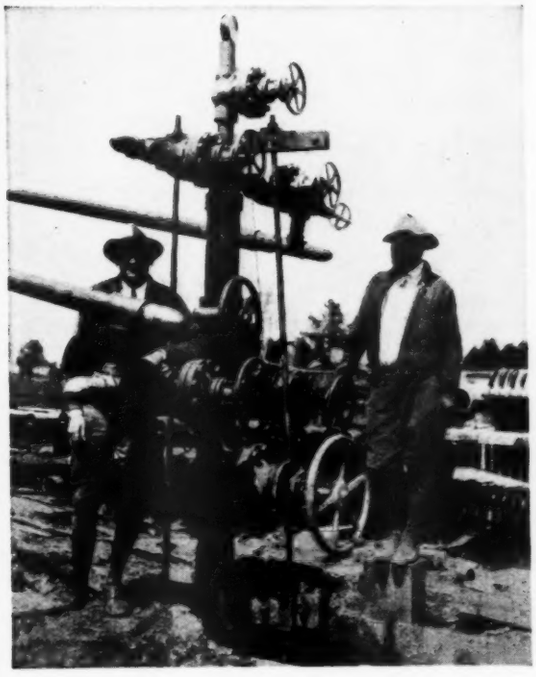

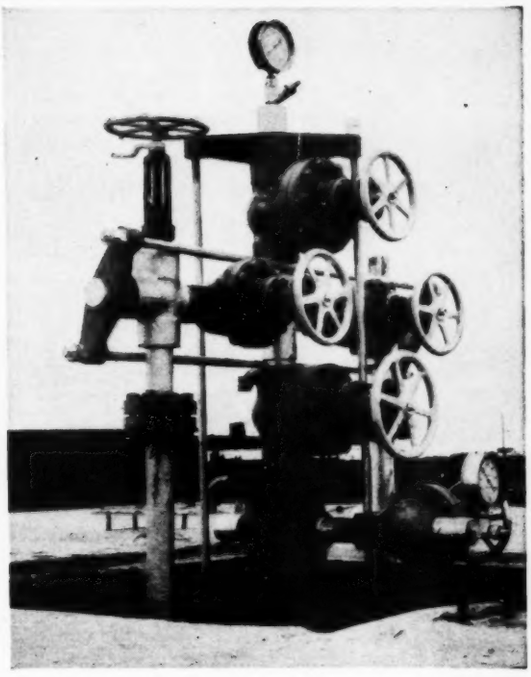

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time to disintegrate mud sheaths.

The strong, highly ionized acids or alkalis will flocculate mud due to their effect on the PH value (hydrogen ion concentration). The acid solutions are generally more effective than the alkalis and an additional advantage is gained by their ability to attack acid soluble impurities, such as carbonates, which are present in many commercial muds. Unless the carbonate content is high, dilute solutions of acid are generally employed, since in the presence of small amounts of carbonate, little acid is consumed. Where hydrochloric acid is used under these conditions, it has been found that between 4 per cent and 5 per cent acid concentration is satisfactory.

TABLE 1—GENERAL NATURE OF SUBSTANCES EMPLOYED IN CHEMICAL CLEAN-OUT OF MUD SHEATHS

Type of Reagent—	Nature of substances employed—
Acid	Strong inorganic acids—with or without wetting agent.
	Semineutral electrolytes—with or without organic solvents.
Neutral	Aqueous dispersion of solvents—with wetting agent.
	Soda ash and caustic plus acid—with heat and carbon dioxide evolution.
Alkaline	Strong caustic compounds plus water—with or without heat evolution.

Soda ash and acid react with the generation of heat, carbon dioxide gas, and a sodium salt. Laboratory tests demonstrate that mud cake permeated by a solution of soda ash disintegrates rapidly when treated with acid. The evolution of carbon dioxide becomes less effective as a means of providing agitation under well conditions as bottom-hole pressures approach 800 pounds. At approximately this pressure all of the carbon dioxide is dissolved and none is present in the gaseous state[5].

Pretreatment of mud used to drill through productive zones by the addition of pulverized calcium carbonate (ground limestone) has been discussed in detail by Miller and Shea[6]. Laboratory tests demonstrate that sheaths built up by limestone-treated mud are more susceptible to disintegration with an acid wash than those formed by untreated muds. A number of wells have been successfully drilled and completed in California with limestone mud. Operators report that the addition of 25 to 30 pounds of ground limestone does not affect the drilling properties of mud and that its use adds little to the cost of the well. The practice of acidizing such wells before completion has made it difficult to assemble data to prove the benefits of the method under oil field conditions. However, most of the operators who have experimented with ground limestone in mud believe that its use assures complete disintegration of the mud cake.

Mud sheaths existing in wells which have been on production tend to be permeated with oil. Experimental work in the laboratory has shown that under these conditions it is essential that the chemicals employed for cleaning out have the property of wetting, or penetrating, oily mud.

It has been the practice of operators in several California fields to chemically treat wells for removal of mud sheaths after the oil strings are landed and before the wells are put on production. The procedure has been to spot the chemical solutions in the perforated section as soon as the drilling fluid has been displaced from the hole. The results obtained have been difficult to evaluate, although several operators are convinced of the merits of the process and claim that on the average they have obtained greater production from wells treated before completion than from wells not treated.

Where the necessity of using chemical treatment to disintegrate mud sheaths can be anticipated, better results may be obtained if the chemicals are applied before oil is allowed to enter the hole. This practice avoids the more difficult treatment of oil permeated mud. There is a possible objection to treatment at this time in wells penetrating large thicknesses of sands of varying permeabilities and effective rock pressures. It has been suggested that uncovering all sand faces under these conditions may result in loss of production from high- into low-pressure sands. In this event consideration might be given to treatment later in the life of the well when, due to depletion, pressure may be more nearly equalized.

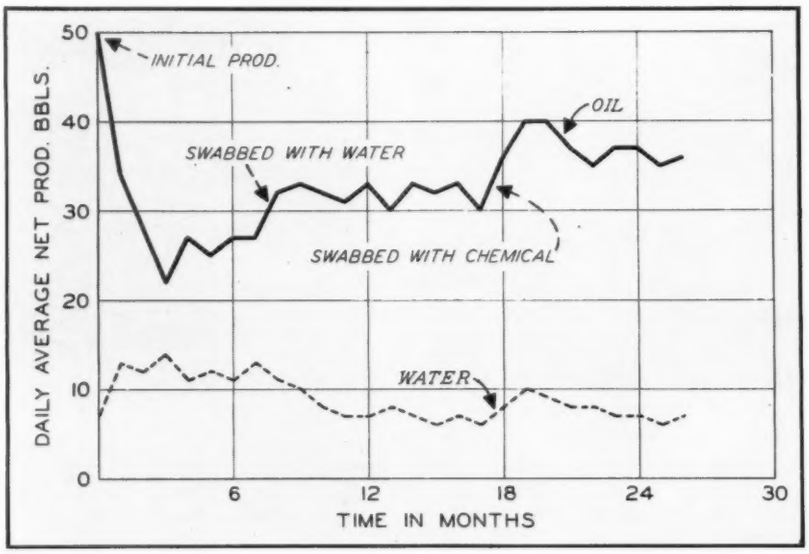

Fig. 3—Effect of chemical treatment for mud-sheath removal, Buena Vista field. Perforations down and up swabbed with water prior to chemical clean-out

Chemical service companies generally recommend that the treating solutions be agitated thoroughly in the perforated section of the well until mud stops coming into the hole. Down and up swabbing, patent pressure washers, patent vacuum washers, or pump circulation through a swab washer are the mechanical methods commonly used to obtain the desired agitation. The effectiveness of chemical treating methods for removal of mud sheaths are generally recognized. However, certain operators have questioned whether it has been the chemicals, the washing, or the combination of the two that has been responsible for the results obtained.

It is known that agitation accelerates the rate of chemical action and laboratory tests have demonstrated that it applies to the chemical disintegration of mud cakes. In a well, the chemical solutions can attack the mud sheath only through perforations which are limited in both area and distribution. Under these conditions it is important that mechanical agitation be provided for the purpose of: (1) Forcing fresh chemical behind the pipe and preventing the establishment of equilibrium conditions at the faces of the mud sheath, and (2) bringing the disintegrated sheath material into the perforated pipe where it can be removed by bailing or other means.

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***A.P.I.*—Presented before Pacific Coast Production Division, Los Angeles, Calif., April 13**

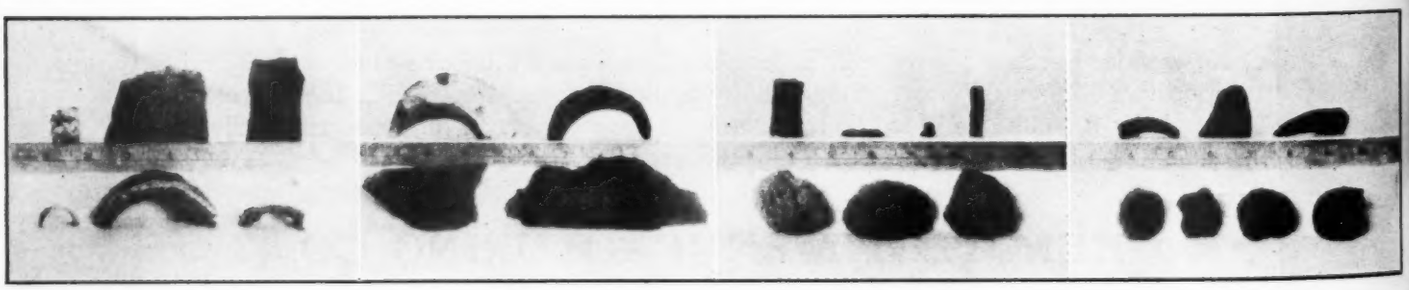

Fig. 4 *Fig. 5* *Fig. 6* *Fig. 7*

Fig. 4—View of cross-section and outer surface of carbonate scale. From left to right: Red scale, Wheeler Ridge; scale from outside of tubing, Coalinga East; and scale from inside of tubing, Wheeler Ridge. Fig. 5—Views of carbonate scale from outside of tubing, Orcutt and Buena Vista. Light color specimen shows curvature of inside of 5-inch casing. Dark colored specimens are of type which requires use of wetting agent in acid. Fig. 6—Carbonate scale from casing, Buena Vista. Bottom row, vesicular scale. Top row, end and outer surface of stalactites formed on inner face of perforated pipe. Fig. 7—Carbonate scale coated with waxy-asphaltic residue, Buena Vista. Bottom row, vesicular form. Top row, from left to right: Tubing scale and two pieces of casing scale showing curvature of inside of perforated pipe. All of these pieces are insoluble in acid unless a wetting agent is employed

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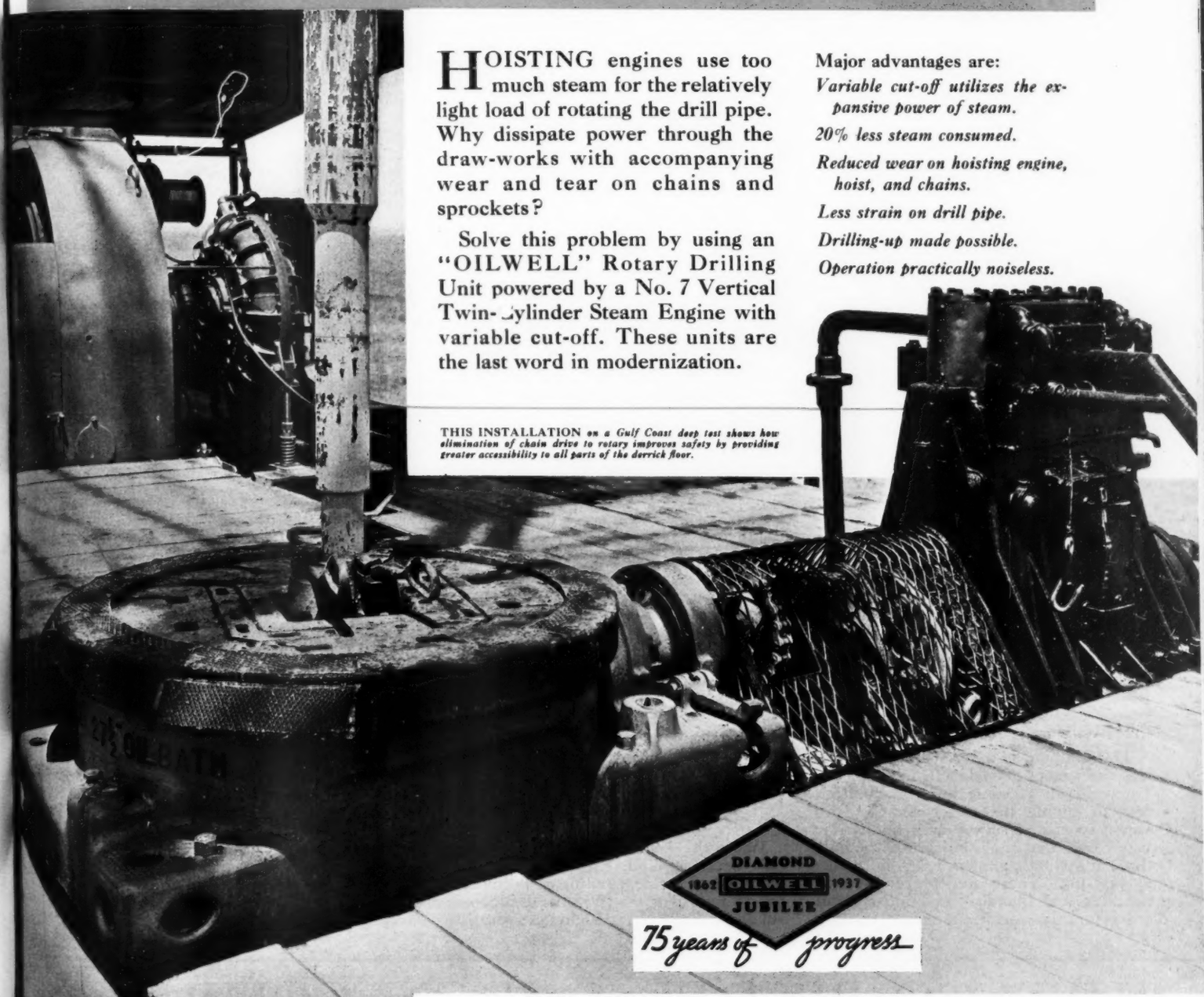

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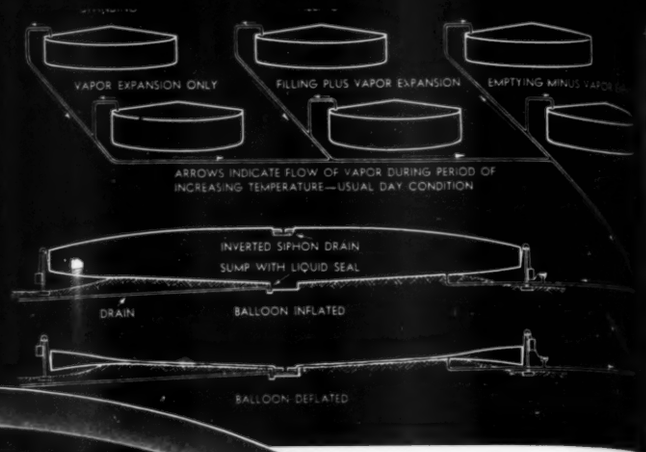

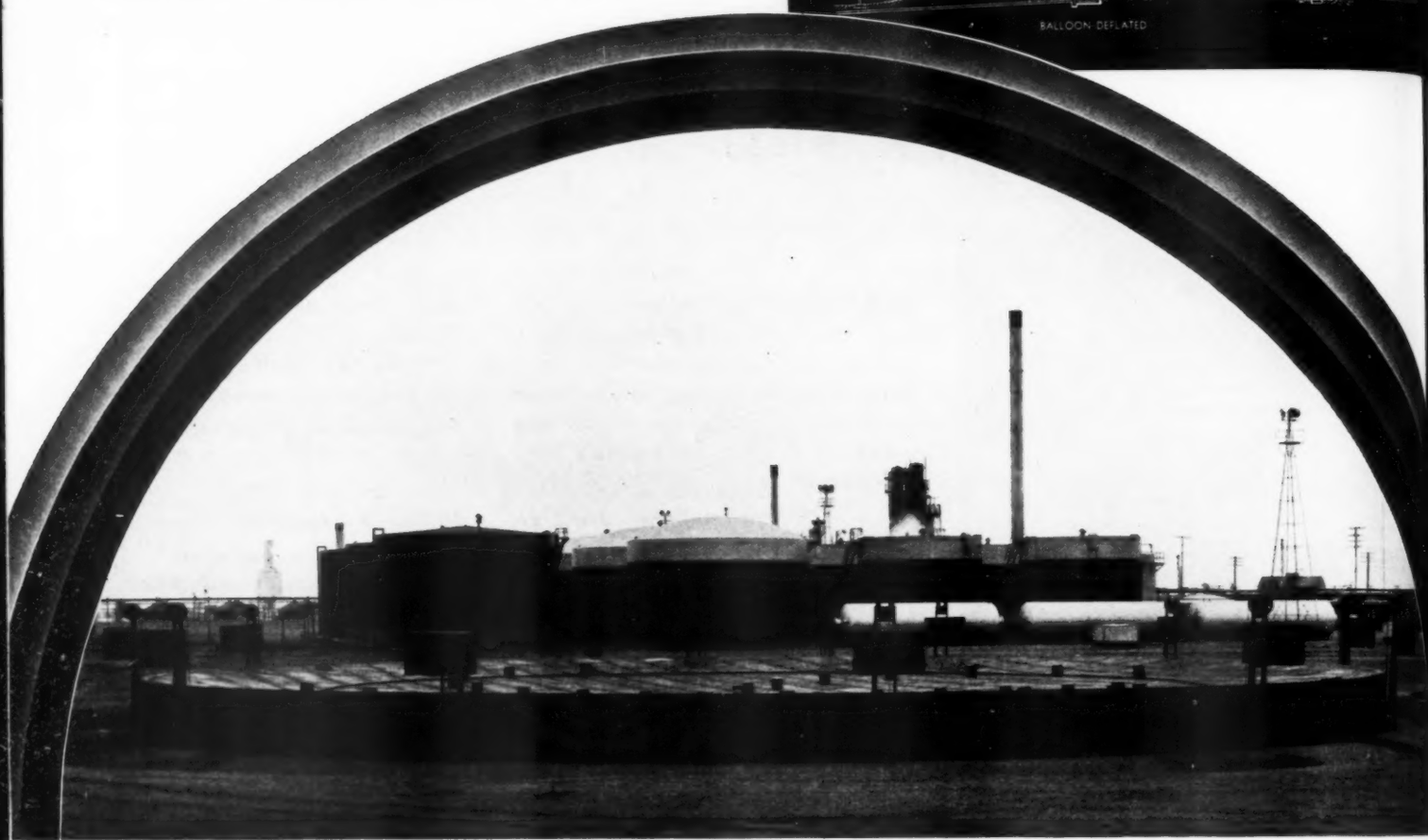

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While the installation described here has been applied exclusively to the handling of motor gasoline, it is important to note that the Wiggins Balloon is equally efficient in reducing evaporation losses from tanks containing crude oil or, in fact, any grade of oil that does not boil at atmospheric temperatures normally encountered.

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to increase the speed and probable effectiveness of the chemical treatment by providing mechanical agitation that few have gone to the expense and trouble of making field tests of a critical nature to demonstrate the merits of chemical treatment with agitation as compared to the results obtainable by mechanical washing without the use of chemical. Such data as have come to the attention of the writer indicate that where a bad mud condition exists, chemical treatment with agitation is more effective than straight mechanical washing, or chemical treatment without agitation. With less severe conditions, either of the other methods may remove the mud sheath as completely as chemical treatment with agitation, but the results are generally less certain.

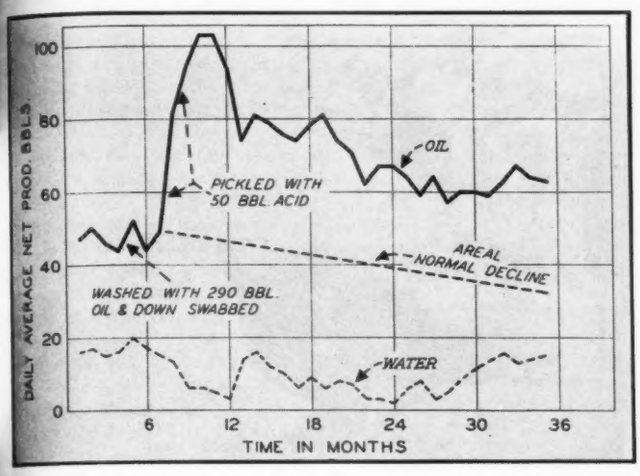

Fig. 8—Effect of acid treatment for carbonate scale removal, Buena Vista field. No mechanical washing

An operator reports the case of a well redrilled in a low pressure sand in Buena Vista with rotary tools and drilling fluid with a high colloidal content. When the mud was bailed from the hole for completion, it was found that little fluid entered from the formation. Repeated bailing tests during 81 tours of up and down swabbing of perforations showed a productivity of less than 5 bbls. per day total fluid. After treatment with chemical, perforations were swabbed for six tours and the well was bailed for three tours to remove the quantities of mud and sand that entered. A rise of 310 feet in static fluid level was noted and the hole could no longer be bailed dry. The well was completed with a daily average net production of 40 bbls. of oil and 100 bbls. of water. Similar data are reported by other operators for two wells completed in low-pressure sands.

Effectiveness of Treatment

The effectiveness of chemical treatment for the removal of mud sheaths that were obstructing production is illustrated in three curves included in this report. Figure 1 shows the recent production history of a well situated in the Fruitvale field. This well was completed with an initial production of 70 per cent of the average of the adjacent wells and production before chemical treatment was equal to 60 per cent of the average of the same wells on completion. Perforations were washed with hot water and all subsequent work on the well was performed during the period covered by Figure 1. The well was flowing by heads and production had declined to 100 bbls. per day average when tubing was pulled on the 91st day. At this time, 73 feet of sand was bailed and a pump was installed. Pumping production averaged 120 bbls. per day to the 122nd day when rods and tubing were pulled and mud treating chemical was spotted by bailer through the perforated section. After 48 hours pickling, (defined as standing for chemical action without mechanical agitation), the hole was bailed for five tours. Mud entered the hole in notable quantity after three tours of bailing and the static fluid level rose 500 feet. The well made three flows through 8⅝-inch casing, and about a barrel of pasty mud was found on bottom after each flow. Tubing was rerun to the point where it had been located previously and the well was permitted to produce by natural flow. Production has averaged 180 bbls. per day for 161 days and the estimated additional gross oil recovery for the period is 9,900 bbls. The treatment cost was $940 total for chemical service and labor. Water production was not plotted since the total cut has been less than 0.5 per cent during the life of the well.

The producing life of a pumping well after redrill is shown in Figure 2. On completion, perforations in this Fruitvale well were washed with a patent vacuum washer for five hours. Production declined to month eight when the well was washed by circulating 300 bbls. of oil through a swab washer traversing perforations. An estimated additional production of 1,750 bbls. was obtained in the four months before production returned to the normal trend. Daily average production was 36 bbls. in month 29, when 30 bbls. of mud treating chemical were spotted through a shop washer traversing perforations. After 10 hours' pickling time, pasty mud was bailed from the hole during five hours. The pump was replaced at the same depth as before treatment. Additional oil recovery is estimated as 13,050 bbls. net in six months. Current production is 108 bbls. per day, 72 bbls. more than that obtained prior to treatment. The total cost of the chemical treatment was $980. Water production is not shown as the total cut has been less than 0.5 per cent for the period described.

Figure 3 shows the production of a pumping well located in Buena Vista. Both the initial and settled productions were less than those of nearby wells. Perforations were pickled 22 hours with water and were down and up swabbed for a total of nine tours during month eight. A limited quantity of mud and sand was bailed from the hole after these operations. In month 18 the perforations were pickled 24 hours in a water solution of a mud treating chemical and perforations were down and up swabbed for 10 tours. The quantity of mud that came into the hole with swabbing and bailing, estimated as 50 bbls. total, was so great that the lease foreman thought that the chemical might be forming mud from the sales present in the perforated section. A rise of 100 feet was noted in the static fluid level and a production increase of 9 bbls. per day maximum was obtained with the pump depth unchanged. The total outlay of $580 for chemical and labor was repaid in 78 days' time by the additional oil recovered.

Economically Successful

Reports by five service companies covering mud-sheath removal treatment at 450 wells in California indicate that a total of 279 treatments or 62 per cent were economically successful (i. e., the total cost for chemical service plus labor was repaid by additional production recovered within a 90-day period). Practically all of the important producing areas of the state were represented.

A detailed investigation by the writer of mud treatments at 63 wells located in the San Joaquin Valley showed that 34 jobs or 54 per cent were economically successful. This covered all of the chemical mud treating experience of 18 companies and the wells included were located in eight different fields, namely: Kettleman, North Dome, Buena Vista, Midway, Sunset, Lakeview, Fruitvale, Mountain View, and Edison. Fourteen of the 18 operators found that the production increases of successful jobs were sufficient to more than defray the expense of the unsuccessful jobs. The program of the other four operators covered eight wells and was unprofitable as a whole. All wells included in this study were equipped so that satisfactory gauges were obtained before and after the chemical treatment.

Removal of Scale

The chief constituent of the common scale deposited in oil wells in California is calcium carbonate. Silicate and sulfate scale are reported in a few cases; however, commercial treatments for the removal of these types are not being attempted at this time. The carbonate scale of California has essentially the same chemical composition as the limestone formations of the Mid-Continent and eastern fields.

Lime salts present in oil field waters in the form of bicarbonates, Ca $(HCO_3)_2$, are probably responsible for common scale deposition. This material is unstable and with reduction in pressure or with agitation, calcium carbonate, $CaCO_3$, is precipitated as a solid following the escape of carbon dioxide, CO_2, in gaseous form[7]. Scale has been found: (1) On sucker rods, (2) inside and outside of tubing, (3) inside of perforated pipe, and (4) in the perforations. In view of the method of its formation, there is every reason to believe that scale may build up on the outside of perforated casing and on sand faces. Sample of scale from rods,

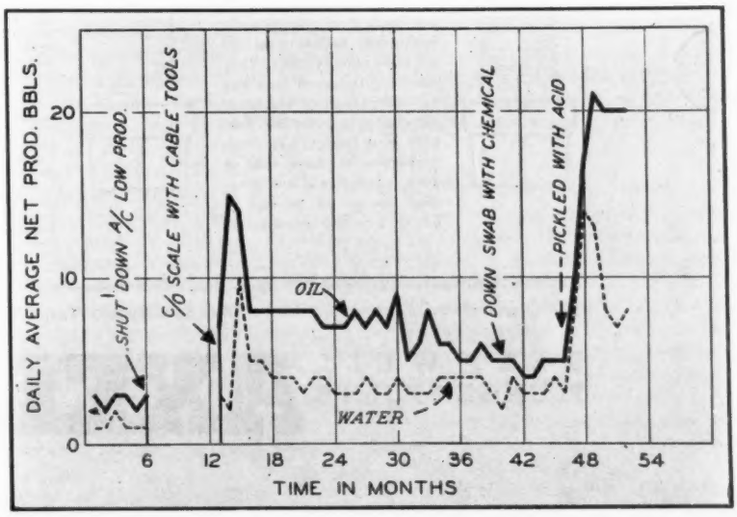

Fig. 9—Effect of cable-tool clean-out and acid treatment for scale removal, Midway field. Treatment in month 47 represents a misapplication of chemical

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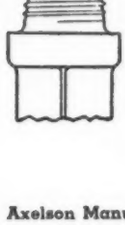
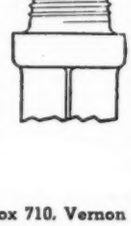
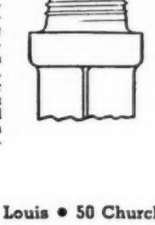


Axelson No. 60 Sucker Rods are made from exceptionally high-grade carbon steel under strict alloy practice. They are fully tempered from end to end, assuring consistent physical properties. The ductility and impact resistant properties of these rods is such as to indicate their practical use for all average to heavy pumping conditions.



Axelson No. 58 Sucker Rods are made of special alloyed steel that materially aids their resistance to corrosion and are fully normalized and tempered from end to end. They present excellent physical properties combining increased ductility and impact resistance with high yield and tensile strengths. These rods are desirable for pumping wells where extra heavy loads are encountered and where irregularities in pumping movements are unavoidable.



Axelson No. 69 Sucker Rods are made from a high alloy special nickel molybdenum steel produced in electric furnaces. These rods are especially resistant to corrosion, are fully normalized and tempered from end to end. They offer excellent yield and tensile strengths with great ductility and impact resistant properties.

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DEEP WELL PLUNGER PUMPS **AXELSON** SUCKER RODS

tubing, and casing are shown in Figures 4, 5, 6 and 7.

Carbonate scale varies in color from white through shades of gray and brown to black. The texture varies from dense or fine grained through coarse grained to a porous or vesicular structure. The marked differences in physical appearance resulting from variations in color and texture are illustrated in Figures 4 and 7. Carbonate scale can be identified in the field by its hardness and solubility. The material can be scratched by a knife but not by a finger nail and is insoluble in water but dissolves rapidly in acid with the evolution of non-inflammable gas (note: all oily material should be washed from sample before the acid solubility test is made).

The rate of scale deposition in oil wells is dependent on the calcium bicarbonate concentration, the volume of water, and the pressure conditions. The scale shown in the center of Figure 4 (maximum thickness five-sixteenths inch) represents a 20 months' accumulation on the outside of tubing at a Coalinga East Side well pumping an average of 12 bbls. of oil and 36 bbls. of water daily. An operator reports a 1-inch scale accumulation between 5-inch perforated pipe and 2½-inch tubing in 21 months' time at a well located in the Orcutt field. Daily average production was 16 bbls. of oil and 40 bbls. of water. A sample of this scale is illustrated in Figure 6. This extreme deposition occurring in the old Orcutt field is in keeping with the observation of certain operators that scale deposition becomes increasingly serious as fields near depletion.

Carbonate scale dissolves in the inorganic acids with the evolution of carbon dioxide gas. Acid treatments to remove scale in California have generally employed hydrochloric (muriatic) acid because chloride salts have a high degree of solubility and the acid offers less hazard in handling. Nitric acid is difficult to inhibit (i.e., prevent action on metal) and is more dangerous to handle than muriatic acid. Sulfuric acid is objectionable because it forms a relatively insoluble precipitate, calcium sulfate (gypsum), on reaction with scale.

The muriatic acid employed in scale removal operations varies from approximately 10 per cent to 17 per cent hydrochloric concentration by weight. The concentrated muriatic acid generally supplied (20° Be. commercial grade) has a 31.4 per cent hydrochloric content. Common dilutions are 12 gallons of 20° Be. acid to 30 gallons of water to make a barrel of 10 per cent acid; and 21 gallons of 20° Be. acid to 21 gallons of water to make a barrel of 16.9 acid. A barrel of 15 per cent acid will dissolve approximately 77.3 pounds or 0.45 cubic feet of carbonate scale[5].

To minimize corrosion of well casing, tubing, and pump equipment, it is desirable that the acid employed in well washing operations contain an inhibitor[8, 9, 11]. Inhibitors are substances which markedly decrease the rate of attack of acid on steel without retarding the acid's reaction with scale. Laboratory tests show that 15 per cent muriatic acid without an inhibitor at 150° F. will dissolve a weight of steel casing equal to a uniform penetration of 0.022 inch in 24 hours. Addition of a suitable inhibitor to 15 per cent acid reduces the acid penetration to 0.0001 inch under the same test conditions. Green reports that hardened steel and cast iron will be preferentially attacked by acid if low carbon steel is present[12]. Chromium plated plungers should be removed from a well which is to be acidized, as acid readily attacks chromium. The inhibitors now in use offer no protection to chromium plating.

Carbonate scale deposited at wells in several fields is practically insoluble in ordinary acid and can be cleaned out effectively only when a suitable wetting agent is added to the acid solution. A wetting agent has the property of lowering the interfacial tension between the acid and the oil coated surface, thus permitting penetration of the acid to the carbonate material. Treatment of this type of scale is essentially the same as that previously discussed for oil permeated muds. However, it appears that in certain cases coatings of waxy-asphaltic residues, rather than liquid oil, are responsible for the resistance to attack by ordinary acid. Carbonate scale requiring the use of a wetting agent in the acid is shown in Figures 5 and 7.

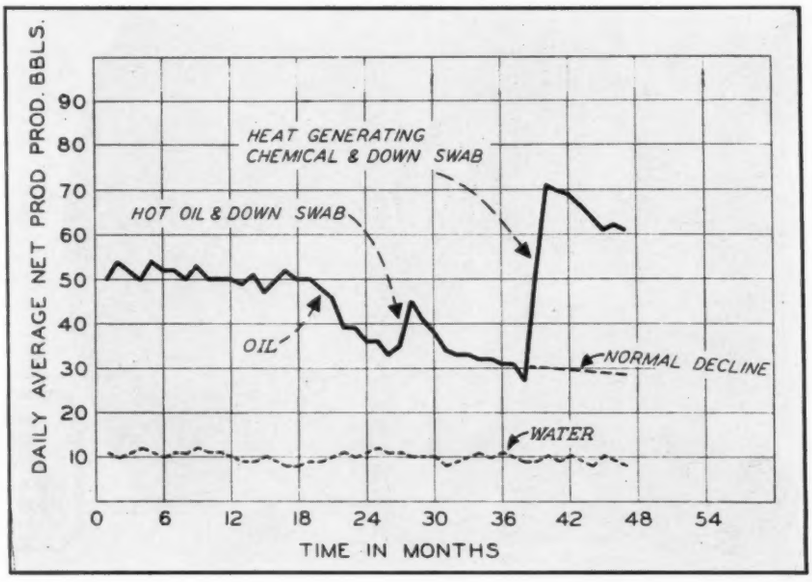

Fig. 10—Effect of chemical treatment for waxy-asphaltic residue removal, Sunset field. Perforation washed with hot oil prior to chemical clean-out

Presence of scale on rods, tubing, or in the casing of a well does not prove that sufficient scale has precipitated in the perforations or behind the pipe to obstruct production. A detailed analysis of the decline curve, cumulative recovery, and comparisons of the same data for similarly completed wells in the area is essential in determining whether a worthwhile production increase may be expected as the result of scale removal treatment.

The oil and water production, depth pressure, pump depth, location of productive sands, probable point where production is scaled off, and possible presence of "thief sands" are factors which determine the best method of introducing the acid. The job should be planned so that the acid will be maintained in contact with the scale until the scale has been completely dissolved or the acid spent. Spotting of acid by bailer, syphoning through tubing hung near bottom, or pumping in between tubing and casing are the methods generally employed. Several operators report production losses at wells where acid was forced away into sands[10]. Mechanical agitation tends to speed the reaction, but in practically all cases satisfactory results have been obtained where perforations were pickled without agitation.

The amount of acid necessary to clean out all of the scale cannot be predetermined due to uncertainty as to the volume of scale to be dissolved. Most operators have been employing treatments of acid equal to between one and two times the capacity of the perforated section. After 12 to 24 hours' pickling with the well casinghead maintained at atmospheric pressure, samples of the acid are obtained by pumping or thieving. The acid concentration is determined by titration or its effectiveness in dissolving scale is checked. The acid treatments should be repeated until the presence of unspent acid in the hole after pickling shows that the scale has been completely cleaned out.

The beneficial results obtained by removing carbonate scale from a pumping well in Buena Vista are shown in Figure 8. Perforations were washed in month five by pumping 290 bbls. of oil through a shop washer traversing perforations, followed by down-swabbing. Pieces of scale bailed after the wash job and a production study of the well suggested the desirability of acidizing. A 50-bbl. treatment in month eight increased the net oil production from 49 bbls. per day to 81 bbls. per day. After a second pickling with 50 bbls. of acid in month nine, oil production increased to a maximum of 103 bbls. per day. Production after 30 months declined to 63 bbls. per day or 31 bbls. per day more than the normal expectation. There was no significant change in water production or pump position during the period shown. Additional oil recovered in 30 months is estimated as 25,900 bbls. The total cost of labor and material for the two acid jobs was $540.

The production curve presented in Figure 9 covers a marginal pumping well in Midway field. The well was shut down with a production of 3 bbls. per day of oil and 1 bbl. per day of water in month six. After scale was cleaned out of the inside of the perforated pipe with tools in month 12, a maximum production of 15 bbls. per day of oil and 10 bbls. of water was obtained. With production averaging 5 bbls. per day of oil and 2 bbls. per day of water in month 40, the perforated pipe was treated with a heat generating caustic chemical and down-swabbed. This treatment represented a misapplication of chemical as these substances will not dissolve scale. After pickling perforations with 10 bbls. of acid in month 47, production increased to a maximum of 22 bbls. per day oil and 14 bbls. per day water. The total cost of the job was $170 and the additional oil recovery is estimated at 1,960 bbls. in five months. The greater effectiveness of chemical over mechanical clean-out methods for removing scale is clearly shown by the work at this well. . . . . .

Removal of Waxy-Asphaltic Residues

The opinion has been held by many operators that deposits of gummy paraffin and asphaltic material in perforations or on faces of sands have been responsible for the restriction of production in a number of wells in California. A limited amount of laboratory work has been done on gummy material recovered from the perforated section of wells, but the exact composition has not been made public. Until such time as the composition of this material is definitely determined and a better term developed, the writer suggests that it be designated as "waxy-asphaltic residue."

A service company reports that the perforations of a liner recovered at Huntington Beach were plugged with waxy-asphaltic residues. The author has verified reports of the recovery of this type

(Continued on Page 58)

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Rotary Table Drive

By C. F. FORSBERG
Honolulu Oil Corp., Taft, Calif.

While considerable data has been gathered from time to time on electric powered rigs, no attempt, apparently, has been made to segregate the table drive from the hoisting duty excepting in a most general manner. With this thought in mind, it seemed that interesting facts might be obtained by running some tests on drilling rigs and finding what the power requirements were to operate the table with various weights on the bit. This subject is more pertinent today than when these tests were first considered, inasmuch as individual drive for the table is becoming more popular as time goes on. While the tests are by no means complete, as considerable work would have to be done to make them so, yet some facts are brought out that, at first glance, might easily be overlooked. One thing is quite definite, viz, that as the weight on the bit is increased in soft formations and the drill is speeded up, the power requirements increase very rapidly.

Conventional Drive Tests

Tests were made on four wells located in the southern end of the Buena Vista hills. These wells are Numbered 3-A, 5, 36 and 44. In wells 3-A, 5 and

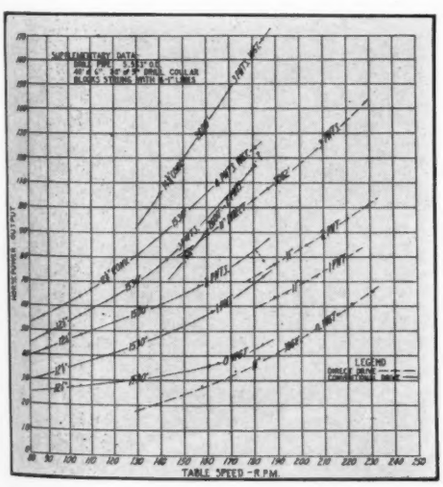

Fig. 1—Rotary table horsepower using conventional and direct rotary drive with 11-inch, 12¼-inch, and 14¾-inch drag bits

44 a conventional drive is used in which the motor used to drive the table was rated 8-pole, 150-horsepower, 900 r.p.m., this being a form wound rotor motor with resistor laid out for approximately 50 per cent speed reduction on drilling points with some additional resistance for idling speeds. In this conventional drive the motor is direct connected to a reduction gear which in turn drives a countershaft. From this countershaft the table is driven by means of the ordinary chain and sprockets and, in addition, means are provided for using this motor for hoisting by ordinary hook-up through line and drum shafts. In this particular case a double sprocket drive is used from the take-off shaft of the reduction gear to the countershaft and considerable flexibility is secured in choice of speeds. It will be noted that this is the customary drive encountered in practically every electric-driven rotary rig, a considerable number of them being installed throughout the oil fields. The highest obtainable speed for table operation with the arrangement used is 184 r.p.m., this, of course, being secured when the motor is operating with its rotor short circuited. Due to the double sprocket arrangement it is also possible to obtain a speed of 105 r.p.m. on the table with the motor operating at maximum speed.

In all tests six 1-inch lines were strung through the blocks and 5-inch drill pipe was used. The drill collars consisted of 41 feet of 6-inch weighing 4,580 pounds and 20 feet of 5-inch weighing 2,040 pounds. The subs weighed approximately 600 pounds and the bit 120 pounds. The 5-inch drill pipe weighed 25.25 pounds per foot.

Depth of Wells

The wells in this particular area are finished at depths ranging from hard sand and shale to soft shales and Conglomerates. In drilling the change from one formation to another occurs quite frequently and rapidly so that considerable care is required to secure readings that are comparable. Readings were obtained by means of curve drawing wattmeters with necessary instrument transformers. Check readings were also noted of amperes and volts, but, of course, all power data was taken by means of the wattmeters. The instruments were well damped so that oscillations were held to minimum amounts, but every effort was made to secure readings when speed and weight conditions were constant. All speeds were taken by tachometers and the weights on the bit were recorded by a popular form of automatic weight indicator. It will be noted in the curves accompanying this article that weights on the bit are given as one, two, three and four points. This refers to the readings on the automatic weight indicator and transferred into weight on bit means that an average of approximately 2,700 pounds is held on the bit for each point on the indicator. All horsepowers are brake horsepower output at the motor shaft, the original readings all being corrected for motor efficiencies as well as resistor losses.

Tests were first made on well 5, using a conventional 14¾-inch drag bit. It will be observed that in this particular test the maximum horsepower required at the highest table speed is 168 at 184 table r.p.m. with three points on the bit, or approximately 8,100 pounds loading. With two points weight on the bit the horsepower output of the motor is 125 at 184 table r.p.m. No tests were made at other bit loads, but the general trend of the curve can be followed for other table speeds, if desired. The tests were made at 2,600 feet and the formation was a soft shale where the drilling was comparatively easy with rapid footage made. (See Figure 1.)

The next tests were made on well 3-A with all rig conditions similar excepting that a 12¼-inch drag bit was used instead of the 14¾-inch bit used on well 5. More complete tests were made on this well and readings were taken with no weight on the bit as well as one, two, three and four points of weight.

In the next series of tests an oscillating type of bit was used in which the actual digging surfaces are mounted on roller bearings which revolve one revolution for each five revolutions of the drill pipe. Also a wobbly effect is secured with this bit

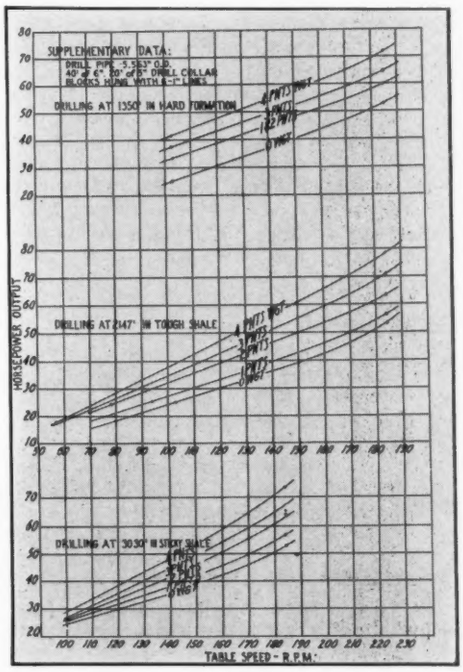
SUPPLEMENTARY DATA:
DRILL PIPE 5.25 LB. O.D.
40' of 6", 20' of 5" DRILL COLLAR
BLOCKS STRUNG WITH 6-1" LINES
DRILLING AT 1350' IN HARD FORMATION
DRILLING AT 2147' IN TOUGH SHALE
DRILLING AT 3030' IN STICKY SHALE
HORSEPOWER OUTPUT
TABLE SPEED - R.P.M.

Fig. 2—Rotary table horsepower using conventional chain drive with 12¼-inch oscillating bit

and the principle of operation is quite different from the drag bits used. In this well, No. 44, a series of tests were made at a depth of 1,350 feet, 2,147 feet and 3,030 feet, all of the bits being 12¼-inch size. In the tests at 1,350 feet and 2,147 feet only two points were taken with the various weights on the bit. In both these tests the motor was operating at maximum speed with no resistance in circuit. In the test at 3,030 feet several intermediate points were taken. It will be noted that the formations were somewhat different in the three cases, but that the horsepower output of the motor was in all cases considerably lower than in the case of drag bits used in other wells tested.

Peak Horsepower

The peak horsepower obtained was 79 with four points weight on the bit. In fairness, it is not believed that this is due to the superior qualities of the bit, but to the formation being drilled as progress was slower with this type of bit when the tests were made than was the case with the drag bits. Apparently when hole is made, the horsepower required varies to quite a considerable extent with the speed of drilling. An interesting point to be observed in this series of tests is that the load on the motor with zero weight on the bit was practically identical regardless of the amount of drill pipe used, being the same for 1,350 feet as for 3,030 feet. Also, due to the hardness of the formation, the peak loads, even with four points weight on

***A.P.I.*—Presented before Pacific Coast Production Division, Los Angeles, Calif., April 13**

the bit, are quite low and the variations with different loading are small. (See Figure 2.)

Direct Drive Tests

The last well on which tests were run was No. 36, and in this case quite a different arrangement is used than on preceding wells. In this instance the electric motor is direct connected to the rotary table by means of a jaw clutch and the motor and table are mounted on a common base, consisting of 10-inch I-beams and 10-inch channels welded together so as to form a one-piece unit. The direct connection of the motor to the table permits a maximum speed of 231 r.p.m. of the table with no load and slightly lower speed when fully loaded. In such a drive, of course, it is necessary to have some other power for hoisting purposes, and this is provided by another motor chained to the drawworks in the conventional manner. This direct drive, being something of a new development, is worthy of more than passing attention. The experience of one of the larger drilling contractors, operating in the California fields, is that it costs him $750 per year for the upkeep of the rotary chain connecting the countershaft to the table. It has been the experience of the oil company where these tests were made that this upkeep averages $550 per year. In the direct drive, of course, this expense is entirely eliminated. In addition there is no chain guard for the cathead man to climb over on his way from the cathead to the table. . . .

As a matter of interest, some comparisons (see Table 1) are listed showing other wells drilled in the immediate vicinity where 11-inch bits were used. The time of drilling is shown down to the depth where coring started, maximum and average degrees of variation as determined by one of the commonly used devices and number of bits used. The same type of bit was used in all cases and all the wells were drilled with the conventional type of rotary as used on wells 3-A, 5 and 44, excepting, of course, well 36, which is the direct drive.

On wells 16 and 26 the maximum speed of the table was 164 r.p.m., but this was changed to 184 r.p.m. after one day of drilling on well 17. The cost per bit is $43 so that on the particular well under consideration (No. 36) an apparent saving of $86 is made over the well drilled to the same depth and over one day's time is saved in the drilling.

In the tests on well 36 very smooth curves were secured. Loading was similar to the other wells in general, tests being made with zero load on the bit as well as with one, two and three points load. The bit was an 11-inch drag bit and the tests were made at a depth of 3,062 feet. It will be noted that there is a difference of approximately 8-horsepower between the direct drive and the conventional drive at the same speed of table with zero load on the bit. This is in keeping with what would be expected since considerable friction of chains and bearings is eliminated by the direct drive. It is believed that considerable maintenance will be eliminated by means of the direct drive over the conventional drive aside from whatever power savings may accrue. In this well, which is the first drilled by this company with the direct drive, fast drilling time was made and a very straight hole secured, which also seems attributable in some degree to the direct drive.

In Table 2 are some comparisons made at the same speed between the 11-inch bit used on the direct drive and the conventional drive using 12¼-inch and 14¾-inch bits.

Other data can be compiled if desired from the curves at different table speeds as above is for illustration only. It is quite difficult to obtain readings at low horsepower demands when it is realized that large multiplying constants are necessary in the instruments in order to take care of the load fluctuations encountered. It is for this reason that it is believed that the curves would be identical insofar as general direction of slope is concerned if all errors could be eliminated. It will be noted that this is not so excepting in the case of the direct drive where readings were easier to obtain.

One operator is considering the use of table speeds of 500 r.p.m., and it may be in the immediate future we will see something of this nature tried out. To date the above described drive has shown no particular defects and it is believed that when some more experience is had, more definite conclusions can be made as to its practicability. An interesting occurrence with the direct drive was that in coring at from 120 to 140 table r.p.m., using 6⅝-inch and 9⅝-inch core-barrels, practically 100 per cent recovery of core was obtained. It was felt that there might be some doubt about this when the equipment was originally assembled and a sprocket was welded onto the jaw clutch so that (if necessary) this could be driven from the countershaft by simply putting on the chain. It was not found necessary to do this.

In closing, the writer feels that if data had been secured on several holes of larger diameter, with speed variations such as used in the foregoing tests, something definite could be worked out on the units necessary to power the tables for various conditions of drilling. In any event the data obtained within the limits tested may be of some value in the choice of equipment for table drives.

TABLE 1—COMPARISON OF WELL DRILLING TIME AND ANGLE OF VARIATION

No. of well—	Depth drilled	Time to drill (days)	Angle of variation — Maximum	Angle of variation — Average	No. of bits used
16	3,100	7.0	1½°	1½°	16
17	2,700	5.2	2°	1.33°	11
26	3,100	5.6	2½°	1.75°	15
36	3,100	4.33	1°	.75°	13

TABLE 2—COMPARISON OF VARIOUS SIZE BITS

Points wt. on bit	Table r.p.m.	11-inch bit H.P. output	11-inch bit H.P. to drill	12¼-inch bit H.P. output	12¼-inch bit H.P. to drill	14¾-inch bit H.P. output	14¾-inch bit H.P. to drill
0	180	37	..	45	..	45.0*	.....
1	180	58	21	69	24	.....	.....
2	180	71	34	79	34	117.5	72.5
3	180	102	65	116	71	162.5	117.5

*Zero horsepower assumed as no tests were run to determine this, but from behavior of other tests this figure should be quite accurate.

Chemical Clean-Out of Wells

(Continued from Page 55)

of material from the perforated section of a well in Coalinga East and another in the Sunset field.

Liquefaction of waxy-asphaltic residues by solvent action or application of heat generating caustic chemical appears to be the most effective way of cleaning out this material. Five waxy-asphaltic residue treatments are reported by service companies, of which three were economically successful. The writer has verified two of the jobs, an unsuccessful solvent treatment in Fruitvale and a successful heat generating caustic treatment in Sunset.

Figure 10 shows the production history of the pumping well in the Sunset field which was successfully treated for removal of waxy-asphaltic residue. After averaging 50 bbls. per day oil for 19 months, production declined rapidly to 35 bbls. per day at month 27 despite repeated bailing jobs and pump changes. Accumulation of gummy material was noted on the pump cages and standing valve anchor. Hot oiling and down-swabbing of perforations temporarily increased the production of 45 bbls. per day but the rapid decline continued and by month 38 production was 27 bbls. per day. Accumulations of waxy-asphaltic residue were noted each time the pump was pulled. Surface tests with heat generating caustic chemicals demonstrated the effectiveness of these substances in breaking down the residue material.

The perforations were loaded with water and 200 pounds of chemical were dropped down the casing. After pickling 16 hours, perforations were down-swabbed four hours. A quantity of basic sediment was bailed from the hole during 16 hours and the first eight hours pumping production had to be turned to the sump on account of residue content. Production was increased to 71 bbls. per day maximum with a decline of 61 bbls. per day after nine months. The total cost of the chemical and labor was $250. Additional oil recovery is estimated as 9,330 bbls. in nine months.

Conclusions

1. Chemical treatment of wells in California to increase productivity should not be regarded as a cure-all. It cannot create production and is not effective at this time as a means of increasing reservoir permeability. At best, it clears sand faces and perforations for the entry of production.

2. Chemical clean-out of mud sheaths, carbonate scale, and waxy-asphaltic residues has proven profitable to the California oil industry despite a rather high percentage of failures. Where applicable, these methods are generally more efficient than the older mechanical methods.

3. In many cases treatment failures have been the result of ill advised selection of wells and chemicals. With more careful selection of wells and increased knowledge of proper chemical application, the percentage of unsuccessful treatments should show a marked decrease.

4. Chemical clean-out methods are becoming an accepted feature of California production practice.

The writer wishes to express his appreciation to the various oil chemical service companies contributing data on chemical clean-out treatments and results. Many of the ideas presented in this paper were developed in discussion with personnel of the operating and service companies.

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By I. W. ALCORN and J. U. TEAGUE
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The use of wire screen in the completion of wells in the Gulf Coast dates back to the early days of Spindletop, in the early 1900's. From the crude methods employed at that time the science and development of bottom hole well completion methods have continually advanced although even today exact data on underground well conditions is lacking in many particulars. There are numerous differences of opinion on the subject, and much yet remains to bring this particular phase of production on the Gulf Coast to the advanced stages of development achieved in many other phases of the business.

Conventional Methods in Use Today

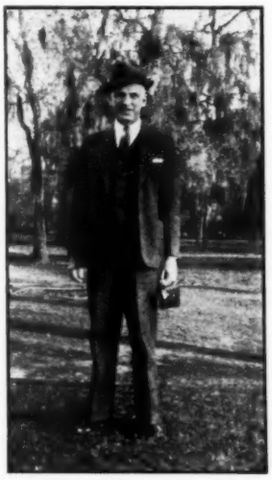
The various ideas and methods being adopted in present-day practice may be listed as follows:

1. Full gauge hole is drilled to bottom with blank casing run to bottom and then cemented and perforated. Optional procedure from this point may be to hang tubing free in hole without setting screen and packer (Figure 1) or to complete with screen or slotted pipe and packer, (Figure 2). In the latter case the tubing, instead of hanging free, may be sealed on top of the liner or packoff between tubing and liner. While the majority of completions follow method No. 2, method No. 1 is no doubt gaining much favor and is of course the more recent development. As a matter of interest it will be noted that during the period August 15, 1934, to December 31, 1936, there were performed 3,223 perforation jobs, for 431 different customers. All of these, of course, were not initial completions, but include many workover jobs. This distribution of the gun perforating jobs done during December, 1936, and January, 1937, is shown in Table 1.

It will be observed that the majority of these jobs were made in the Texas Gulf Coast, principally in the Corpus Christi area, which, incidentally, is an area quite difficult to handle from the standpoint of well completions, in as much as the sand sections are thin and the gas-oil ratios particularly high, the latter being 4,644 at Flour Bluff, 3,143 at Heyser, 23,900 at North Kohler and 18,000 to 19,000 at Voss. Ranging along with the Corpus Christi area is the Southwest Texas area, which would include much of the development in Duval County, centering in the Government Wells area.

2. The casing is set on top of the sand, or slightly below the oil-gas contact, and a rathole drilled to the total depth of the well, then screen or slotted pipe with blank liner and a packer is run (Figure 3). In this event the tubing may be either hung free in the hole or sealed to the casing or liner as is illustrated in Figure 4 shown in the cut below.

3. The well may be completed by the full hole cementing procedure, in which the slotted pipe or screen is run on bottom of casing (Figure 5). The screen or slotted pipe has the same O.D. as the casing.

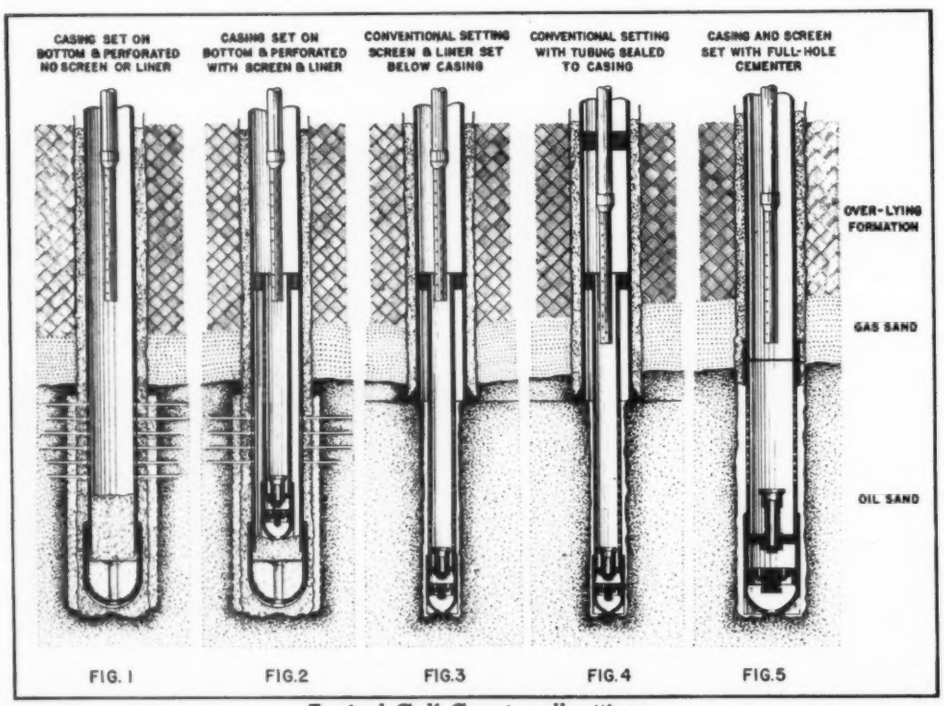


I. W. ALCORN

Method No. 1: In running blank pipe to bottom and perforating, hanging tubing free without use of screen and packer would imply that the producing formation was fairly tight, or well cemented. One factor that would lend itself to successful completion by this method would consist in having a sand that was high in saturation, porosity, and permeability. If this were true, the potential and allowable could be produced with a low differential pressure or pressure drop through the perforations. It is conceivable that wells could produce at the rate of 400 or 500 bbls. of oil per day with 1,000 cubic feet gas-oil ratio and still have only a few pounds differential pressure drop across the face of the sand. In other wells, the same amount of production might necessitate several hundred pounds pressure drop. This factor, therefore, should be an important point to be considered.

This method also lends itself to economical full hole completion. A cost analysis of the various well completion methods appears in Table 2 with tabulation of basic costs used and description of types of completion.

This method is also accompanied by better coring information and excellent control of the gas-oil ratio and salt water encroachment. One operator has completed a number of wells with this procedure without the use of screen and packer, and while not claiming this method will apply generally to the Gulf Coast does feel that it is satisfying his requirements. This operator has been able to maintain consistently a gas-oil ratio of from 600 to 1,000 cubic feet, which is virtually the amount of gas contained in solution. On one well, as an example, the gas-oil ratio gradually increased since completion from 750 to around 6,000, and surface pressures to 3,100 pounds per square inch. It was decided to cement off the perforations from 8,225 to 8,238 feet and perforate another section. A squeeze job (forcing cement into the formation) was made with 25 sacks of cement, of which 12 sacks were estimated to have gone into the formation under


CASING SET ON BOTTOM & PERFORATED NO SCREEN OR LINER
CASING SET ON BOTTOM & PERFORATED WITH SCREEN & LINER
CONVENTIONAL SETTING SCREEN & LINER SET BELOW CASING
CONVENTIONAL SETTING WITH TUBING SEALED TO CASING
CASING AND SCREEN SET WITH FULL-HOLE CEMENTER
OVER-LYING FORMATION
GAS SAND
OIL SAND
FIG. 1
FIG. 2
FIG. 3
FIG. 4
FIG. 5

Typical Gulf Coast well-settings

***A.P.I.*—Presented before the Southwestern District Production Division at Dallas April 1 and 2**

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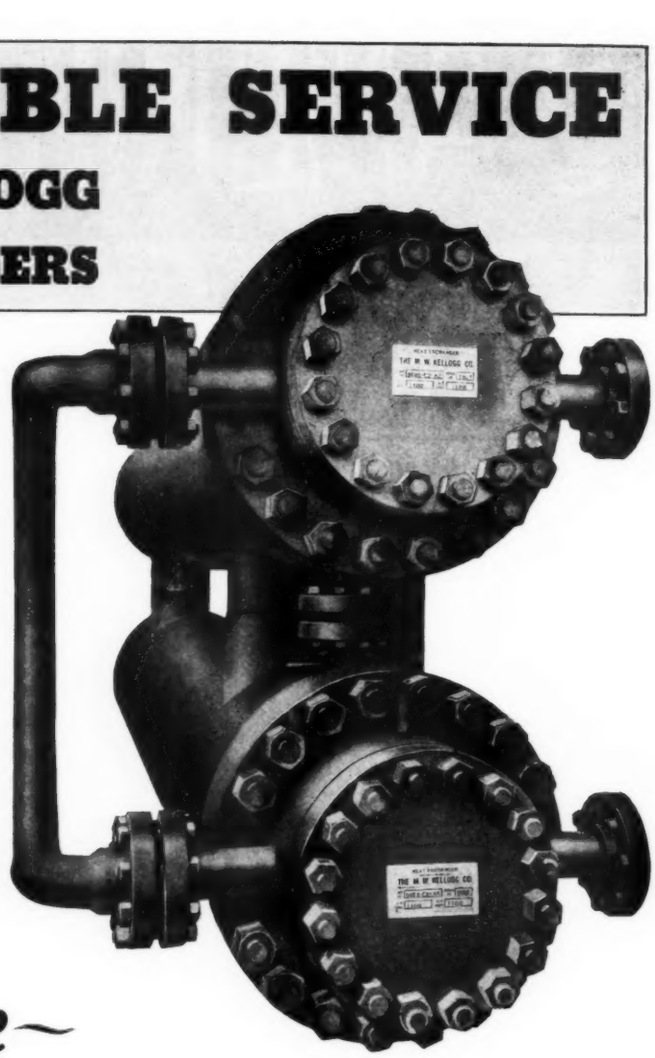

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3,000 pounds per square inch pressure. The cement was then drilled out from 8,142 to 8,234 feet, the 6⅝-inch casing from 8,230 to 8,233 feet perforated with 12 shots, 2½-inch tubing run to 8,230 feet and well washed in. Incidentally, it was necessary to kick the well with 275 pounds per square inch casing pressure and circulate 30 bbls. of oil. The well then started flowing. Two days later, when the well was clean, casing pressure was 2,600 pounds per square inch and tubing pressure 1,960 pounds per square inch, and gas-oil ratio 1,810. These gradually increased until the casing pressure was 2,850 pounds per square inch, tubing pressure 2,150 pounds per square inch, and gas-oil ratio 5,000. The desired objective not being attained, it was decided to squeeze off from 8,230 feet to 8,233 feet and perforate lower. It is estimated that six sacks of cement were put into the formation; the cement was then drilled from 8,210 feet to 8,242 feet and the casing was perforated from 8,238 feet to 8,241 feet with 19 shots.

TABLE 1—DISTRIBUTION OF GUN PERFORATION JOBS

Area—	Jobs December, 1936	Jobs January, 1937
East Texas	37	27
North Louisiana and Arkansas	3	11
Texas Gulf Coast	87	74
Louisiana Gulf Coast	21	20
Southwest Texas	82	86
Laredo District	20	24
West Texas	4	3
Southeastern New Mexico	7	8
Total	261	253

was coming from the Halliburton second stage holes in the 7⅝-inch casing, or if it was coming from bottom. Perforations tested were from 7,480 to 7,497 feet. This test definitely proved that the water was coming from below and not from the second stage holes in the casing. A squeeze job was then made through perforations from 7,480 to 7,497 with 50 sacks of cement. The cement was drilled from 7,244 to 7,490 feet, then the 7⅝-inch casing perforated from 7,480 to 7,489 feet with 27 shots. The testing tool with 3/16-inch choke top and bottom was run and the well flowed seven hours, 25 minutes through this tool, producing 143 bbls. of fluid with a pressure of 1,200 pounds per square inch. When the tool was pulled, 720 feet of oil, 150 feet of salt water, and 90 feet of mud was found in the drill stem. Tubing was run in the well to a depth of 7,486 feet and two days later the well produced 416 bbls. of oil, 3/10 per cent BS&W, with a tubing pressure of 1,200 pounds per square inch, casing pressure of 1,175 pounds per square inch, on a 3/1' inch choke. To insure cement completely surrounding the casing in the oil, gas, and water zones, centering devices on the pipe may be used, or formation may be underreamed through these sections as indicated in Figures 1 and 2.

In general, productive formations are not well-consolidated in the Gulf Coast, nor do they always have the high saturation and permeability necessary to give a low pressure drop through the perforations.

If the character of the producing formation does not satisfy these conditions, it is possible to install screen or slotted pipe and packer after the casing has been perforated. The objection to this procedure is that the screen is subjected to cutting action due to the concentrated flow of sand and fluid through the perforation in the casing. The screen was set in a well in the Anahuac field which was completed as a high gas-oil ratio well, with an initial production of 6.23 bbls. per hour and ratio of 24,564. The cuts in the screen were caused by the gas and sand coming through the upper perforations in the casing. The screen was pulled and a squeeze job done in the upper perforations to seal off the gas and the well was recompleted with a gas-oil ratio of 217.

To overcome failures of this type there is a growing tendency to increase the number of shot holes per foot in the casing to obtain a more uniform flow. Some operators have cited experiences where a greater number of holes in the casing resulted in a more desirable rate of flow and less tendency to cause screen failure.

For this type of well completion, a fairly new practice, Figure 2, is worthy of mention. Where there is sufficient space below the interval to be produced from (such as plug back and recompletion jobs) it is becoming customary to set the plug some 20 to 50 feet below the perforations in order to provide for a sand trap in which sand entering the hole can settle. On this type of completion a joint of blank pipe is usually spaced opposite the perforations with a back pressure valve between it and the screen or slotted pipe. This blank pipe, which may be wrapped with canvas or rubber, will deflect the sand either downward or upward and absorb the velocity of sand entering the hole.

TABLE 2—BOTTOM-HOLE WELL COMPLETION COST ANALYSIS

(See explanation below)

Method	Casing	Liner and screen	Liner and slotted pipe	Perforating	Liner packer & set shoe assembly	Tubing packer	Cementing	Testing	$250.00 per day rig time	Guide and float shoe misc. expense	Total
Figure 1	$37.50	$	$	$288.00	$	$	$215.00	$150.00	$1,000.00	$61.50	$1,752.00
Figure 2	37.50	142.00	.....	288.00	150.00	.....	215.00	150.00	1,250.00	61.50	2,294.00
Figure 2-A	37.50	142.00	.....	288.00	150.00	175.00	215.00	150.00	1,250.00	61.50	2,469.00
Figure 2-B	37.50	.....	64.80	288.00	150.00	.....	215.00	150.00	1,250.00	61.50	2,216.80
Figure 2-C	37.50	.....	64.80	288.00	150.00	175.00	215.00	150.00	1,250.00	61.50	2,391.80
Figure 3	.....	350.00	.....	.....	150.00	.....	215.00	150.00	1,250.00	.....	2,115.00
Figure 3-A	.....	.....	190.00	.....	150.00	.....	215.00	150.00	1,250.00	.....	1,955.00
Figure 4	.....	350.00	.....	.....	150.00	175.00	215.00	150.00	1,250.00	.....	2,290.00
Figure 4-A	.....	.....	190.00	.....	150.00	175.00	215.00	150.00	1,250.00	.....	2,130.00
Figure 5	.....	460.50	.....	.....	.....	.....	445.00	200.00	1,000.00	61.50	2,167.00
Figure 5-A	.....	.....	237.50	.....	.....	.....	445.00	200.00	1,000.00	61.50	1,944.00

* Slight variations, not illustrated, of the five general methods, are indicated by suffix letters applying to the illustration showing the general method.

EXPLANATION OF TABLE 2

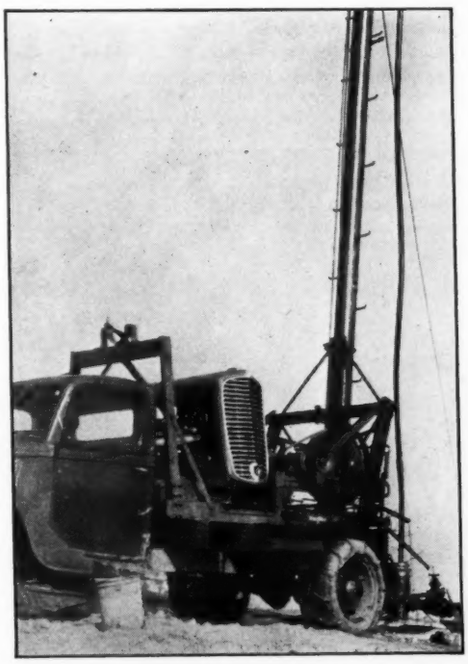
Fig. 1 7-inch casing, 24-45 calibre holes.
Fig. 2 7-inch casing, 24-45 calibre holes, plus 15 feet of blank 5-inch O.D. liner and 12 feet of screen and packer.
Fig. 2-A 7-inch casing, 24-45 calibre holes, plus 15 feet of 5-inch O.D. liner and 12 feet of screen and packer, plus tubing to liner packer.
Fig. 2-B Same as Figure 2 except slotted pipe.
Fig. 2-C Same as Figure 2-B except tubing to liner packer.
Fig. 3 7-inch casing set 25 feet higher, rathole to bottom using 20 feet of screen and 100 feet of blank 5-inch liner and packer.
Fig. 3-A Same as Figure 3 except using slotted pipe.
Fig. 4 Same as Figure 3 except using tubing packer to liner.
Fig. 4-A Same as Figure 4 except using slotted pipe.
Fig. 5 Using 25 feet of 7-inch screen and full hole cementer.
Fig. 5-A Same as Figure 5 except using slotted pipe.

ESTIMATED BASIC COSTS

7-inch casing	$ 1.50 per foot
Perforating 24-45 calibre holes at 6,000 feet, plus $50.00 mileage	288.00
5-inch blank liner at	.80 per foot
5-inch stainless steel screen	10.85 per foot
5-inch to 7-inch—5 to 2½-inch packer and setting assembly	325.00
5-inch to 7-inch packer and setting assembly	150.00
Regular oil string cement job	215.00
7-inch screen at	14.90 per foot
7-inch slotted pipe, 93 slots/foot	5.50 per foot
5-inch slotted pipe, 60 slots/foot	4.40 per foot
Drill stem test—rathole	150.00
Drill stem test—full hole in formation	200.00
Drill stem test—full hole in casing	150.00
7-inch guide shoe and float assembly	61.50
7-inch full hole cementer, including cementing and cement plugs	445.00
To cement coat 7-inch screen	2.00 per foot

After perforating, 2½-inch tubing was run to 8,238 feet, and the well washed until it started flowing. The next day it produced 477 bbls. of oil with casing pressure of 1,200 pounds per square inch, tubing pressure of 825 pounds per square inch, 1/10 per cent BS&W, gas-oil ratio of 581, on ¼-inch choke, which condition has been maintained to date.

As an example of reducing salt water, a well before reconditioning was producing 10 to 14 per cent salt water. The well was cleaned and a testing tool was run with a ¼-inch choke top and bottom, set at 7,487 feet. The well flowed seven hours through the tool, producing 199 bbls. of fluid, 10 per cent BS&W. Pressure varied from 1,400 to 1,625 pounds. A drill stem test was made to determine if water being produced in this well



Portable rig used in running tubing and swabbing in wells through tubing in the Bryson field, Jack County, Texas

Additional Tests Needed

Others have expressed the opinion that in the event sand was produced through the shot holes with this setting, it would collect in the annular space between the wall of the casing and blank pipe, sanding the well up. The merits of this idea can only be determined by additional tests.

Another distinct advantage of this method is occasioned by drilling, in many instances, a multiplicity of sands. For instance at Bosco are five sands:

Frio	Richard	First Marginulina	Mire	Discorbis
8700′	8600′	8500′	8000′	7800′

In this field the general procedure is to drill to the Frio at approximately 8700 feet, run electrical logging device and if cores and logging results warrant further attempts to produce, then run blank pipe to bottom, cement and perforate. As lower sands become exhausted, they would be plugged

off and casing perforated into the next sand. The advantage of such procedure is quite obvious compared with the difficulty, if not the impossibility, of making production tests from these sands at such depths.

Another thought along this line, while not having been tried to date to our knowledge, but which appears to have considerable merit, would consist in using internal flush drill pipe and cementing it in for testing a multiplicity of sands. All are familiar with the difficulties experienced in the past in attempting to complete wells below 10,000 feet. Much trouble is encountered when running casing. This trouble is accentuated in areas where shale has a tendency to heave and where heavy flows of salt water exist. While the procedure is not especially recommended as general production practice, it is suggested as a method to use in deep exploratory wells.

The success of this method largely depends upon successful cement and perforating jobs which are not always obtained. There have been instances of wells completed with this method where it was impossible to penetrate the casing and cement with a gun perforator. There have been other instances where the well did not produce as expected, apparently from faulty cement jobs, and it was impossible to correct the trouble by squeeze jobs. These failures have resulted either in expensive workovers or complete loss of the well, and although not common, they constitute the chief disadvantages to this method of completing wells.

Casing on Top of Sand

Method 2: This is the method that has been most universally used in the past and probably predominates in present-day completion practices. The method essentially consists of setting casing on top of the sand it is desired to establish production from. In cases where the upper part of the sand is a dry gas area, the casing is set through this gas sand in an attempt to obtain the production with a low gas-oil ratio and conservation of the gas energy. From the casing setting a rathole is drilled into the producing formation, which is practically all cored, and a drill stem test usually made. The screen or slotted pipe and packer assembly is then run in the hole on drill stem or tubing, and the well washed thoroughly behind the screen. After washing the screen the back pressure valve is closed and packer set. Some operators wash behind the screen until the well actually begins to flow before setting the packer, while others place only enough water to displace the mud behind the screen above the packer with equally good results. The screen is then washed on the inside and the well brought into production.

TABLE 3—SCREEN AND SAND ANALYSIS OF TYPICAL GULF COAST FIELDS

			Wells completed				Tyler screen analysis. Cumulative per cent retained on screen		
					With casing perforated				
Field	Aver. depth (ft.)	Geologic age	With wire screen .010 ga.	With slotted pipe .040 and .060 ga.	Screen set inside	No screen	60 mesh	100 mesh	200 mesh
Anahuac	7,100	Frio	49	60	11	0	5	20 0	81 0
Conroe	5,100	Cockfield	355	27	0	0	3 4	34 3	83 0
Dickinson	8,000	Frio	3	29	2	2	trace	3 7	41 4
Tomball	5,550	Cockfield	159	62	5	3	10 0	51 0	83 0

TABLE 4—WELLS SET WITH SLOTTED PIPE, MAKING WATER, DICKINSON FIELD

Well	Date completed	Slot size	Amount of screen	Prod. (bbls. per day) Gross	Net	% B.s.&w.	Gas-oil ratio
1	8- 2-35	.060"	24' 7"	61 0	56 0	8 3	15,850
2	4-23-36	.060"	21' 0"	80 4	75 0	3 6	271
3	6-21-36	.060"	21'10"	80 0	76 0	2 5	6,290
4	7- 1-35	.060"	23' 2"	105 0	54 7	48 0	5,300
5	2-22-36	Gun perforated	None	79 0	49 5	37 7	40,400
6	3-31-36	.060"	24' 0"	51 0	46 0	10 0	25,300

The disadvantages of this setting exist in the reduced hole, with reduced drainage area. This would become quite important if wells were subjected to open flow, especially when small oil strings are used. Another disadvantage is the cost of workover jobs, inasmuch as it is usually necessary to set up a drilling rig to cut and fish screen. The problem of later shutting off salt water and reducing gas-oil ratios is complicated by having to work in an open hole that possibly has caved considerably, due to production of sand and shale.

There is some difference of opinion regarding the proper place at which tubing should be suspended in the completed well. Some operators claim that it is preferable to space the tubing close to bottom to be able to wash inside the liner and screen after the packer has been set; this will also permit settled material to be washed from inside the liner at a later date. Other operators prefer to hang the tubing just above the top of the liner for two reasons:

First, it allows more room for sand to settle and accumulate;

Second, it allows for washing over and recovering tubing in the event sand enters the hole in considerable amounts.

The latter method is becoming increasingly popular since numerous tubing strings have been found to be sanded up and stuck when it became necessary to recover them.

Another variation of tubing suspension is to seal the tubing off from the casing, Figure 4. The tubing may either be set down by use of a swage nipple or a lead seal on top of the blank liner, or preferably sealed by means of a packer. The use of the lead seal or packer prevents the well pressure from acting on the casing above. This is particularly desirable when using questionable or second-hand casing and in wells which have a high casing pressure. In any event, it offers an additional factor of safety and assures all of the gas being produced through the tubing rather than being dissipated through some possible leak in the casing and permeating shallower sands, which in some instances may lead to blowouts. It has been observed on wells having casing pressure of 2,500 pounds per square inch or more, that the ordinary casing screwed coupling is not gas tight and allows a considerable volume of gas to leak through. It is evident that these leaks occur near the surface of the well because pumping mud behind the leaking casing has no apparent effect on the volume of gas produced.

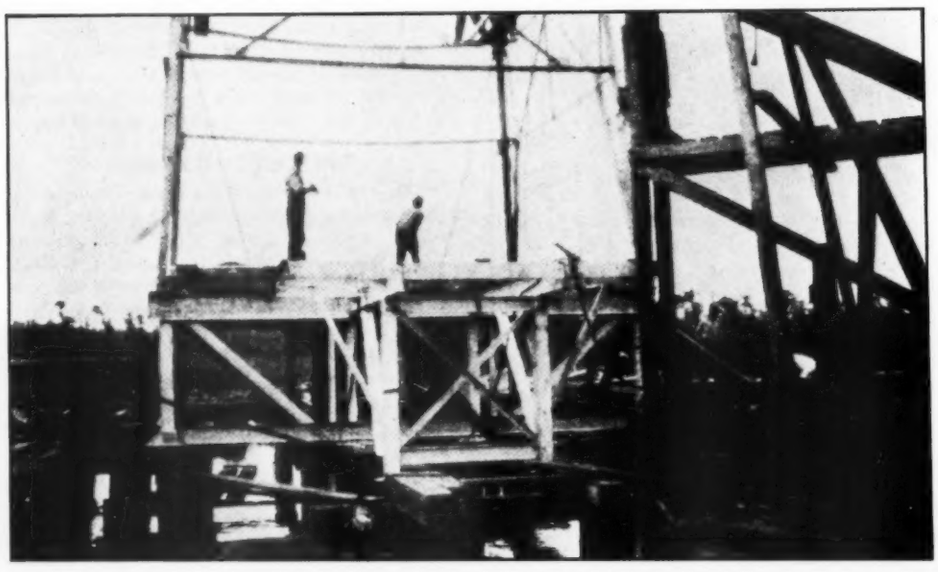
Disadvantages of Method

There are certain disadvantages, however, to this feature. In the first place, it adds to the cost of the well completion and complicates the hanging of the tubing at the surface in that it is a more difficult spacing operation. If, at a later date, the well ceases to flow naturally and it is decided to produce by gas- or air-lift, it is usually necessary to move in a derrick in order to lift the tubing from the seal or disengage the packer, especially in deeper wells.

One operator has recently experimented with the use of small steel balls about the size of buckshot as a filter medium. This operator has been experiencing considerable difficulty with plugged screens due to mud, shale and other fine sediments. Instead of inserting screen in the producing sand sections, this operator filled the hole to the top of the oil sand with these small steel balls and then landed screen on top of the balls. The purpose was, of course, to provide a filtering medium which woud tend to keep sealing-off material from collecting around and closing up the screen, and also to preclude a direct concentrated flow on the surface of the screen, which might lead to screen failure. These experiments are reported to have met with mediocre success, due mainly to some difficulty in keeping the balls in place. This operator is still of the opinion that the idea has merit and expects to experiment further.

Method 3: The full hole cementing method consists of running the screen on the bottom of the casing, Figure 5. Screen will have the same O.D. as casing. Cementing is accomplished by means of ports above the screen and two cement plugs.

This method has not yet come into general use, except for special reasons such as the small diameter of the hole. The few operators who have employed this method point out there are only two disadvantages to this completion arrangement. The first is in cementing the full hole string. Although in the majority of cases good cementing jobs have



Constructing piling foundation for a Gulf Coast well

resulted, still a considerable amount of difficulty in performing the cementing operation has been experienced.

The second disadvantage of this method, as claimed by one operator, is that it is very difficult to wash properly between the screen and the face of the sand. This difficulty has not materially affected one operator's completions because of the fact that all of the wells were completed in a clean sand; but another who has been completing wells in shaley, silty sand maintains that smaller wells have resulted through use of this method because of improper washing. It seems to be the consensus here that the full hole, combination method is more practically applicable to cases where wells are deepened from one horizon to another through a small hole, and a conventional completion would have had to have been made in a hole of very small diameter. On the other hand, one operator is completing all wells by this method, and has, as a consequence, reduced hole size and also casing size to a minimum, thereby effecting material monetary savings.

One of the latest applications of the full hole cementer involves the use of a specially prepared screen. This method was worked out by one of the major operators in the Gulf Coast for a field where the saturated section of the producing formation is extremely thin and is overlaid by a gas cap. This operator had tried completing wells by setting the casing through the sand and perforating, but had not been able to get entirely satisfactory results, apparently due to slight inaccuracies in measurement in running the gun perforator.

A section of pipe of the desired length, which is sometimes as short as three feet, is slotted with enough .030-inch slots to equal the cross sectional area of the oil string. The slotted pipe is lined with waxed paper, and a layer of cement about one inch thick is applied on the waxed paper by centrifugal force. The purpose of the waxed paper is to prevent the cement from clogging the slots. The section of cement-lined slotted pipe is made up on the casing string with a full hole cementer and back pressure valve. After the well has been set the cement inside the screen is drilled out when the cement plug in the casing is drilled, leaving the screen clean. The cement lining of the slotted pipe permits circulation while running the casing into the hole and also permits washing of the face of the producing sand prior to cementing. This operator has completed a number of wells in this manner with satisfactory results.

General Discussions of the Problems Involved

Possibly the first consideration in a well-planned completion program is a consideration of the size of casing to be set and point of setting. In considering size one must bear in mind the possible producing methods which it may be decided to use during the latter producing life of the well, especially in the Gulf Coast and in California, where many of the wells are producing below 7,000 feet. No doubt many of these wells will preclude the use of conventional pumping methods such as sucker-rods and beams. As an alternative there is at least one hydraulic piston pump, and a centrifugal motor driven bottom-hole pump, both placed in the bottom of the hole, that are now available; but of course, in practically any method the size of the hole in which to work is a prime consideration.

Casing points should receive special consideration, as it is usually desired to produce the well with as little free gas as possible and the utilization to the fullest extent of the inherent energy existing in the formation.

The necessity for using screen or slotted pipe in the Gulf Coast is due to the almost universal condition of the producing formation being a loose, unconsolidated formation of sand or sandy shale. In many cases the overlying beds themselves are sufficiently low in structural strength that after the removal of quantities of oil, gas and water, the surface of the ground will sink, in some cases a matter of several feet. Goose Creek is an excellent

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If you have a structural problem related to the occurrence of mineral products of any kind, let us consult with you. We are prepared to conduct resistivity—natural potential—magnetometer—seismograph—and geological surveys.

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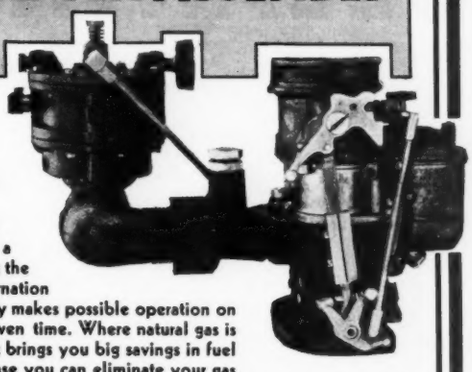
The ENSIGN
FORD V-8 Natural Gas ADAPTER ASSEMBLY
Gives Ford V-8 Power Unit Users the "TOPS" in an Economy Combination



Equipping your Ford V-8 Power Unit with this Ford V-8 Natural Gas Adapter Assembly gives you a power supply that will operate day in and day out at the *lowest possible* horsepower-hour cost. Permitting alternation of natural gas and gasoline as fuels at will, the Assembly makes possible operation on whichever fuel is most economical for you at any given time. Where natural gas is available as the normally cheaper fuel this adapter unit brings you big savings in fuel costs . . . and if natural gas is available from your lease you can eliminate your gas fuel bill completely.

Along with this minimum power cost, maximum power delivery is assured by Ensign PRECISION construction and service-proved design. For economy-demonstrating performance data and complete description of the Ford V-8 Natural Gas Adapter Assembly write for Bulletin 190-A.

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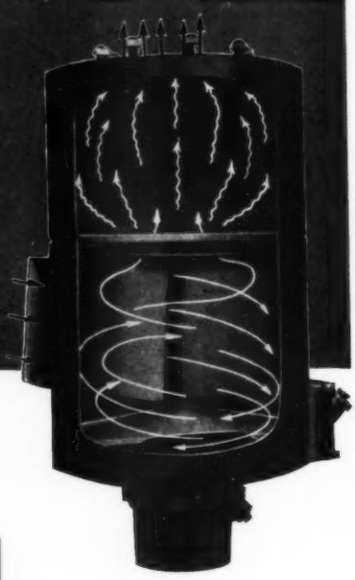
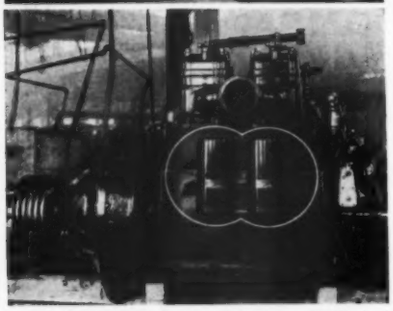


WITH TRIPLE ACTION CLEANING!



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Oil Bathed Wire Filter gives a final cleaning so that the engine is provided with air having well over 99% of the dust removed.

Remember this—The incoming air does not pass through dust-clogged filters which require constant change or replacement to maintain efficiency. In the Vortox Cleaners *ALL* of the dust settles in the oil and is trapped below a baffle plate which positively prevents it from again contacting the incoming air. Regular oil replacement (any light oil will do) and cleaning of sump cups is all the maintenance required by Vortox Cleaners!

Every Vortox Cleaner gives the PLUS Value of air intake silencing, yet you pay nothing extra for this feature!

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Top Photo—9 type L Vortox Air Cleaners installed on model GnG-8 vertical cylinder Cooper-Bessemer Natural Gas Engines at the E. H. Moore Co., Ada, Oklahoma. Note the Vortox Back Fire Relief Valves.

Lower Photo—2 Type D. Vortox Air Cleaners on a 2 cycle Weber vertical engine.

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Vortox
OIL TYPE SELF-WASHING AIR CLEANERS

example of this condition. Prior to withdrawal, the ground elevation was several feet above sea level, while now it is several feet below sea level.

The purpose of screen or slotted pipe, therefore, is to provide a wall sufficient in strength to prevent movement of the formation into the hole and to provide a retaining wall of proper slot or opening width so that the sand grains will arrange themselves to form a bridge and filter bed and thus prevent sand from being produced into the hole.

In considering the use of slotted pipe we find a considerable number of available types. Most of the slotted pipe is machine cut; however, one manufacturer utilizes the cutting torch in making the slots. Professor Tickell[1] has determined that if the slot width is not more than twice the diameter of the grain size (2X) no sand would be produced. With slots wider, all the sand would pass through. In a one-to-one mixture of coarse and fine sand the rule applies to the coarse grains. Mr. Coberly[2] agrees in a 2X grain size forming a bridge, but finds that 3X grain size is necessary to pass all sand. Angularity or shape of grain does not alter the above rule. The effective grain size is not the largest grain, but is the grain size corresponding to a certain cumulative per cent on the screen analysis curve. This varies from 5 to 20 per cent. Oftentimes larger slots can be used due to natural cementation of the grains. To determine this point, crushing tests should be made. It has been determined that water has a softening effect on the consolidation of sand, the water in some cases acting as a solvent for the cementing material so that while wide slots may effectively prevent production of sand during the early life of a well it may later prove entirely insufficient with the encroachment of water.

Vertical slots are equally as effective as horizontal slots and the undercut should be not less than 2 degrees, according to Mr. Coberly[2]. Test results have indicated that production is held back largely by pressure drop through the sand, and that increasing the slot area beyond a certain point does not result in increased flow.

It would seem important to drain the area around the pipe evenly to eliminate any crowding of the flow of oil to one localized part or another of the periphery of the slotted pipe. It is suggested that during the period in which the filter bed is forming around the pipe the production rate should be held down in order to permit the initial flow of sand and foreign matter to be exhausted at the lowest velocity, thereby reducing to a minimum any tendency to cut or wear the slots or screen. It is important that as porous a filter bed as possible be built around the slotted pipe or screen. To accomplish this the largest slots or openings that it is safe to use should be installed in order that the filter bed be built of large grains.

While laboratory tests on the sand would indicate that screen with slot width of .008-inch to .010-inch should be used in most Gulf Coast fields, some operators have gone far beyond these limits and set screen or slotted pipe with a slot ranging up to as high as .060-inch, without encountering sand trouble, even after encroachment of water. This would indicate that the cementation of the sand is an important factor in determining the size of slot or screen opening to be used.

Table 3 shows the sieve analysis of the producing sand from four typical Gulf Coast fields where wells have been set with wire wrapped screen with small openings, slotted pipe with large slots and in a few cases, with only perforated casing, with successful results.

Table 4 shows the production data on six wells in the Dickinson field, five of which were set with slotted pipe and one without screen, other than gun perforated casing, which are producing water without sand trouble.

It is interesting that the sand analyses show that the Dickinson field has the smallest grain size of the four fields shown in Table 3.

It has been determined that short slots are more

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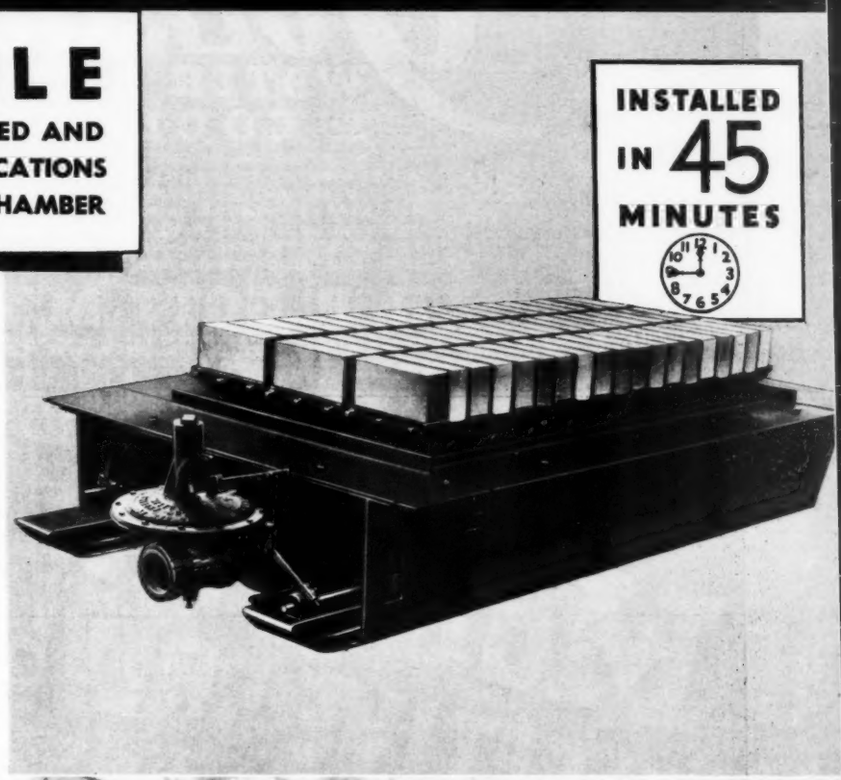

The design of the N.G.E.-Nelson Series 1000 Gas Burner incorporates every consideration for safety, capacity, boiler maintenance, economy of operation, and long service life. The ease and time with which this burner can be installed is outstanding: only 45 minutes is required for the average installation. The whole installation is quickly and easily made, requiring no combustion chamber and a minimum of pipe connections. By requiring no firebrick combustion chamber, brickwork or masonry, or alterations to the boiler, ready removal and reinstallation can be effected if locations are to be changed.

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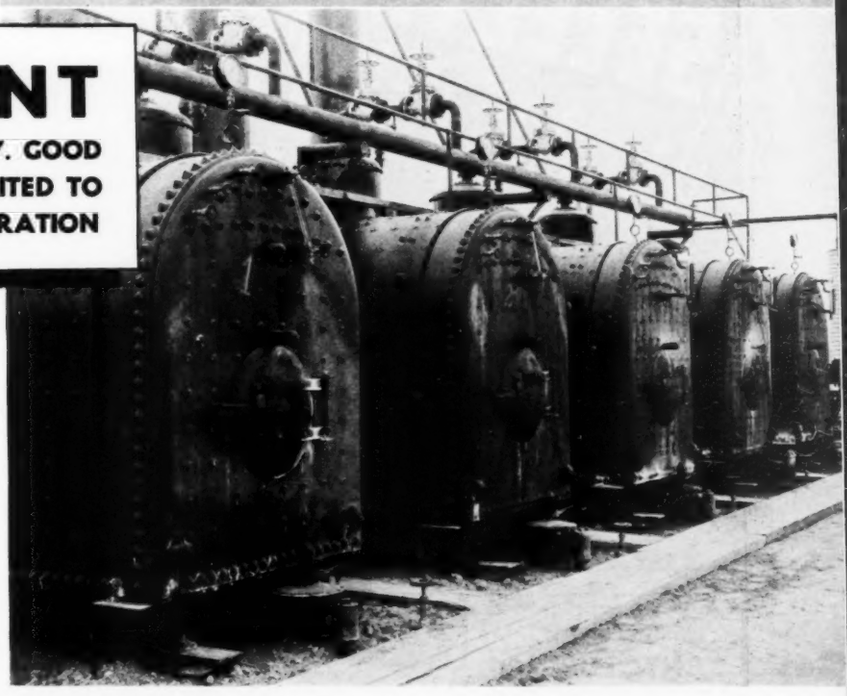

The N.G.E.-Nelson Series 1000 Gas Burner consists essentially of a heavy-sheet steel box in which is placed the gas header, burner manifolds, burners and radiant refractories. Its utilization of the principle of radiant heat transmission to the fullest extent brings to the oil field boiler plant the application of heat used so effectively in large central station plants. Apparent to engineers will be the fact that incandescent heat affords maximum BTU release per cubic foot of combustion space, greatest acceleration in the rate of firing, and operation with less stack draft. Even uniform firebox temperatures are maintained at all times. Your request for a new descriptive bulletin will receive prompt attention.

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effective per unit of area than long slots, and groups of slots are much less effective per unit of area than single slots. It has also been determined that slots smaller than .030-inch are impractical with the cutting torch, and that the minimum slots by machining run around .020-inch, while the standard wire wrapped screen opening width is around .008-inch to .010-inch in width.

While it is definitely known that screens cut out, it is not definitely known what the critical velocity is that will cause this cutting action. Without attempting to cover all the variables that enter the problem, the effective area of the screen may be developed as follows. Considering 5-inch O.D. pipe containing 216 three-eighths inch holes per foot, which is equal to 23.85 square inches, and assuming .008 opening screen, and considering only the area over the holes; also assuming an oil production of 500 bbls. per day, accompanied by 1,000,000 cubit feet of gas, with 80 per cent of the gas being free gas at the bottom and corrected for temperatures of 150 degrees, and considering 2,000 pounds pressure at the bottom of the hole, the gas would be equivalent to 1,180 bbls. This plus the 500 bbls. of oil would give us a total of 1,680 bbls. which must pass through the screen per day, which is equivalent to 11,300 cubic inches per minute per foot of screen. This, then, is equal to a velocity per foot of screen of 10.3 feet per second. With 25 feet of screen the velocity would then be reduced to .413 feet per second. In most cases it is generally conceded that but a very small percentage of the screen area is actually utilized, the balance being plugged off with sand and foreign material. This effective area, however, is an unknown quantity, but from actual experience we can safely assume that in many cases at least the actual effective area is quite small.

The subject of bottom-hole well completion methods is by its nature highly controversial, calling no doubt for different methods to satisfy the specific requirements not only of certain areas but also of individual wells. Due to the large number of unknown and variable factors, the operator would appear justified in going to considerable trouble in determining as nearly as possible the conditions with which he is confronted. The problem itself is one of major importance, as many thousands of dollars are spent in the drilling of a well and the success of recovering this investment lies largely with the method of bottom-hole well completion.

The authors of this paper wish to acknowledge the information and many helpful suggestions obtained from operators and manufacturers in the preparation of this paper, particularly from Mr. W. A. Alexander, of the Shell Petroleum Corp., Iowa, La.

[1]F. G. Tickell, Stanford University (1927).
[2]C. J. Coberly, "Selection, Properties and Manufacture of Perforated Casing," Bulletin of Kobe, Inc., Huntington Park, Calif.

Motion Picture on Hard-Facing

A new motion picture on hard-facing which shows, in detail, the process of adding wear-resisting surfaces to steel parts, is now available for showing to interested organizations or groups. This highly instructive motion picture has been produced by Haynes Stellite Co., a unit of Union Carbide and Carbon Corp., and can be obtained for showings through representatives of either Haynes Stellite or Linde Air Products Co.

The film begins with a brief description of what hard-facing is and how it is done. The correct manner of applying this cobalt-chromium-tungsten alloy is effectively shown. Following this are views of various industrial applications of hard-facing, such as its use on steam valves for high-temperature, high-pressure service, automotive valve seat inserts, cement grinder rings, and dipper bucket teeth. Throughout the film, emphasis is placed on effective methods of application and the economies resulting from the use of hard-facing.

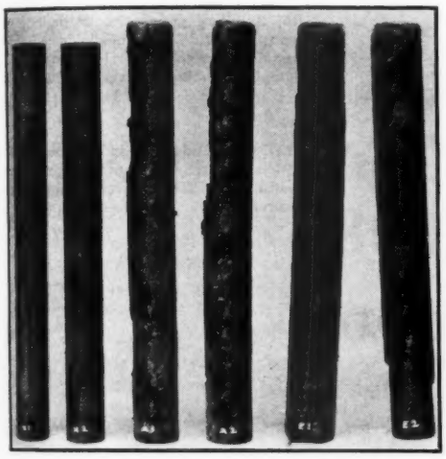
Progress in METALS

By W. L. NELSON

Low Silicon Iron

The low silicon cast irons are scarcely more expensive than ordinary cast iron and their physical properties are superior in nearly all respects. The addition of silicon to cast iron tends to cause the precipitation of carbon as graphite and a general refinement and uniformity of grain structure.

One of the best known silicon or alloy irons is Meehanite Metal which is sold by many licensed foundries. The essential composition of this alloy iron is—silicon 0.75 to 1.4 per cent, and about 1 per cent of some other alloy element usually manganese or chromium.



Comparison of heat-resisting properties of three samples of alloy steels

This alloy is used extensively in the refining industry for tube-supports in pipe stills. Meehanite is particularly suited for tube-supports in the convection section because the supports are larger and the cost of most other alloy irons or cast steels is prohibitive. The alloy is also used for bubble trays, bubble caps, down spouts, and baffles in fractionating towers. The photograph shows the superior heat resisting properties of Meehanite as compared with other materials. Bars similar in appearance to the one on the extreme left were heated at 1,625° F. for 10 hours, and then cooled in air, for a total of 40 cycles (400 heating hours).

Samples X1 and X2—H B grade Meehanite.

Samples A1 and A2 — Engineering High Strength Meehanite.

Samples E1 and E2—Nickel Chrome Cast Iron.

The freedom from scaling, growth and distortion is clearly apparent for the two samples of HB Meehanite and this accounts for its popularity as a furnace casting iron.

The particular properties that are useful are: (1) Resistance to scaling, distortion or growth at elevated temperatures; (2) resistance to mild abrasive conditions such as that caused by the velocity of hot oils and vapors, and (3) mild resistance to sulfur corrosion.

The cost of the metal is slightly higher than for cast iron for regular castings and ranges from 10 to 30 per cent higher for special castings. Considering the relatively low cost of regular cast iron, the cost of these silicon irons appears to be of little significance for those services in which the superior properties of the silica irons can be utilized.

Soil-Corrosion of Lead Alloys and Copper Alloys

The Bureau of Standards soil-corrosion investigation started in 1922 which dealt mainly with the corrosion of ferrous materials, has now been extended to an investigation of nonferrous materials. Research Paper R.P. 945 of the Bureau of Standards is a report of the corrosion of about 6,500 lead, aluminum and copper base alloy specimens, some specimens of which have been exposed for as long as 12 years although the bulk of the work has been done since 1932. This paper may be obtained from the Government Printing Office, price 10 cents. The author, Kirk H. Logan, summarizes the results as follows: "The data on the nonferrous specimens were insufficient to justify positive conclusions as to the rates of corrosion of the materials under any specific soil condition. However, the following conclusions are suggested by the data:

"1. No metal or alloy has been found superior to all others for all soil conditions, but for each condition some suitable material is available.

"2. With but few exceptions the rates of loss of weight and penetration were less for the nonferrous specimens than for the ferrous specimens subjected to the same soil conditions.

"3. Lead in contact with some oils became badly pitted within a few years. Until the causes of this pitting are better understood, cable sheaths should be placed in direct contact only with soils known to be noncorrosive.

"4. The differences in the rates of corrosion of different varieties of lead were small but the purest lead corroded the least. Antimonial lead appeared to corrode at a slightly higher rate than the commercial lead cable sheaths.

"5. The rate of corrosion of lead gradually decreased in some soils but appeared to be maintained in certain soils such as tidal marshes.

"6. The presence of chlorides, bicarbonates, and particularly sulfates, in soils favors the formation of films or deposits which retard corrosion of lead.

"7. Copper and alloys high in copper corroded slowly in most soils. The highest rates of corrosion of copper occurred in soils containing sulfides.

"8. The rates of corrosion of all copper alloys were higher in cinders than in any type of soil tested.

"9. The corrosion of copper and high copper-alloys was more nearly uniform over the surface than was the corrosion of ferrous materials in most soils.

"10. Muntz metal dezincified in a considerable number of soils and probably should not be exposed to severe soil conditions.

"11. The rates of corrosion of copper and brass appeared to change less with time than did the corresponding rates for ferrous materials.

"12. Zinc corroded rather rapidly in a few soils. In some soils the loss of weight of zinc was nearly proportional to the duration of the exposure. In such soils effective protective films were not formed. The protection which a zinc coating affords under such soil conditions is the result of cathodic protection at the expense of the zinc or due to the corrosion resistance of the zinc-iron alloy layers.

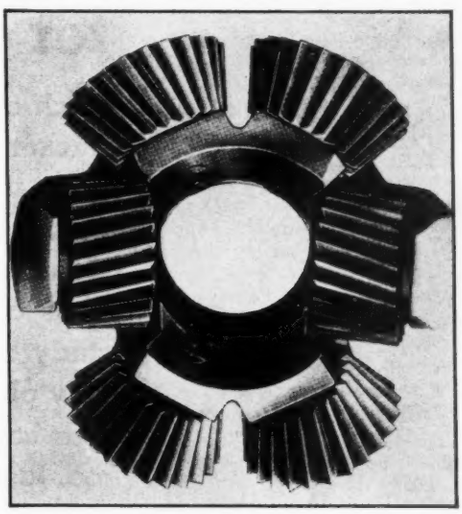
"13. Aluminum and some of its alloys corroded rapidly under most of the soil conditions to which they were exposed.

"14. The interconnection of dissimilar metals exposed to soil resulted in the partial protection of one of them and in more rapid corrosion of the other. Sometimes, however, the formation of corrosion products of one of the materials prevented continued corrosion."

Molybdenum Steels for Rock Core Head

Molybdenum steels are being used for the exceptionally hard service encountered in the obtaining of oil-well cores from hard formations. Most parts of the rock core head, which tool is used to drill the outer portion of the hole leaving the center part as a core which can be removed and examined, can be advantageously constructed of alloy steel.

The main body is constructed of carbon moly steel which results in greater strength and resistance to shock, due in part to the uniformity of properties that are obtained during the heat treatment of such a steel. The materials used in the body must be particularly strong because the body is of realtively thin construction. The cutters are often constructed of carburized nickel moly steel which is characterized by a very tough core and a case having remarkable resistance to abrasive action. These hard abrasive resistant cutters have a long life

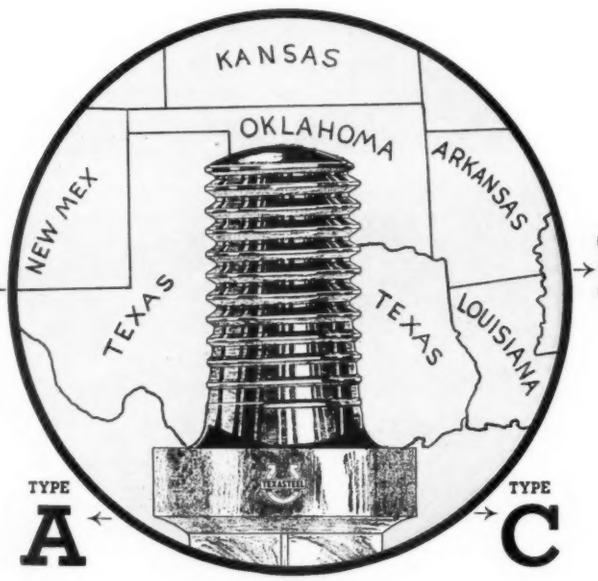


Cutter assembly of roller-bearing rock core head made largely of molybdenum steel

but of equal importance they permit the use of higher cutting speeds.

Carburized nickel moly steel is also used for the cutter pins. The pins serve two purposes—firstly, they act as bearings for the rollers and hence must have a wear-resistant surface, and secondly, they must tie the wings of the body to the center part of the body to form a rigid unit. The rollers and washers are also constructed of nickel moly steel but the washers, which must withstand the most severe wear, are often faced with stellite. Recall that no lubricant can be used and that sand is continually working between all of the wearing surfaces. (Refer to "the Moly matrix" for May, 1936.)

4 SPECIAL TYPES of RODS



TYPE N (API Specification) is a double pin sucker rod highly resistant to corrosion (including the special metallic couplings). It is especially adapted to West Texas and New Mexico fields where acid is a paramount problem. Slightly lower tensile strength than Type NM but it handles average pumping load efficiently.

TYPE A (API Specification) made in both double pin and box and pin type. High tensile strength. Recommended for heavy loads with no corrosion present. Today many of the deepest wells in the Mid-Continent area are equipped with Texasteel Type A Rods.

TYPE NM (API Specification) is a double pin, high tensile strength sucker rod, fitted with non-corrodible metallic couplings. Recommended for unusually heavy pumping conditions, especially where large amounts of salt water must be handled. This type NM Rod has proven its worth in a wide group of Mid-Continent fields wherein a complete cross-section of the most difficult pumping problems is encountered.

TYPE C is made only in box and pin style and recommended for average pumping conditions where an average priced rod is desired.

TEXASTEEL SUCKER RODS for each Field Condition

Each of the four different types of Electric Steel Sucker Rods was developed by Texas Steel Company to do a certain job—and from the four you can find the rod for any pumping job in the Mid-Continent area. Texasteel Electric Steel Sucker Rods are the result of 18 years' manufacturing study and field testing by experts. We are the only plant in the Southwest which makes sucker rods complete from molten metal to the finished rod. Just call a Texasteel man when you've got a sucker rod problem. One of the four Texasteel types is your solution.

Every Texasteel Rod is coated with rust preventive paint and fitted with metal thread protectors.

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TEXASTEEL

PROBLEMS FROM READERS

Edited by L. G. E. Bignell

Painting Steel Storage Tanks

We have recently installed 23 storage tanks and have been advised by the manufacturers to allow them to stand unpainted until thoroughly rusted so that the mill scale may be removed. These tanks are located near a railroad yard and subjected to smoke from engines burning coal. Will you advise us the proper kind of paint to apply having in mind the proximity of the tanks to the coal smoke?—F. M. S.

In Doctor Speller's book "Corrosion—Cause and Prevention" it is stated that "observations of the corrosion of metals in the atmosphere indicate that the rate varies greatly with seasonal changes in natural atmospheric conditions, the extent and kind of atmospheric pollution, the length of time the object remains wet, the conditions favorable to the absorption of atmospheric impurities, the intermittent removal of water-soluble salts by heavy rainfall, and the presence of condensed moisture in the rust film.

"The protective means which are employed must, therefore, be so designed as to meet these particular conditions, and it follows that preventive measures applicable to this class of corrosion are not necessarily adapted for use with iron exposed under other conditions."

The surface should be clean and free from all loose scale or rust. Mill scale and rust may be removed by sandblasting or scratchbrushing the surface. Grease and oil must be removed and for this purpose a 5 per cent solution of soda ash or caustic soda may be used. The surface may also be washed with solvent naphtha.

When the surface is cleaned and dry it should be coated with a primer before a perceptible film of rust has had a chance to form. The surface should be as dry as possible for even an invisible film of moisture on the metal will not only tend to cause corrosion underneath the paint but will prevent the paint from adhering properly to the metal. The priming coat is preferably applied in the latter part of the day, and no painting should be done except in dry weather.

The priming coat should be sufficiently thin to fill and wet completely any depressions in the metal surface. A thick coat may bridge over such depressions and leave parts of the surface less protected. Sufficient time should be allowed for perfect drying between successive coats. Whether the paint should be applied by spray or brush is largely an economic consideration.

The manufacture, selection and application of the best protective paints for any particular condition are based upon certain principles and practical considerations found to be correct by experience. H. A. Gardner has stated these principles with particular reference to the nature of the pigment as follows:

"1. Basic substances in sufficient concentration inhibit the corrosion of iron. Basic pigments that are effective for this purpose are litharge, red lead, blue lead (basic lead sulphate), white lead, zinc oxide, and zinc dust.

"2. Chromic compounds (soluble bichromates), even in great dilution, prevent the corrosion of iron. Chromate pigments that are similarly effective when used in sufficient amounts are as follows: Basic lead chromate, normal lead chromate, zinc chromate.

"3. Neutral substances that do not ionize to acid reaction are considered next. So-called neutral or inert pigments, such as iron oxide, which do not excite corrosion, produce, with linseed oil, very durable films. Such pigments include black, brown, and red oxides of iron, china clay, silica, talc and barium sulfate.

"4. Substances that form a galvanic couple with steel in the presence of moisture cause rapid corrosion. Pigments which act in this fashion (graphite, carbon black, lampblack) are used only as constituents of the finishing coats on steel surfaces, when first insulated from the metal by a coat of basic or chromate pigment paint. These carbon pigments with linseed oil form very durable and water-resisting coatings.

"From the above data, it is apparent that paints for priming steel should preferably be made of a substantial amount of one or more basic or chromate pigments, and that these paints should be covered with water-resisting finishing coats of carbon or iron oxide paints. For instance, steel that has been primed with high-grade, red-lead paint and finished with two coats of a carbon paint will be protected from corrosion under most conditions for a long period of time.

"Properly formulated combinations of zinc dust, zinc oxide, and iron oxide have also given excellent results upon iron and steel surfaces. The presence of zinc dust apparently tends to keep the film rather elastic."

Definition of Terms

I frequently note references to "blowouts," "wild wells" and "cratering" and wonder if these terms are all synonymous. Can you define them?—S. E. Y.

As good a definition as we know of for these three terms is to be found in Charles B. Carpenter's I. C. 6938, "Some Causes of Blowouts During Drilling and Means of Prevention, With Special Reference to the Gulf Coast Region," published by the U. S. Bureau of Mines, March, 1937.

"As the terms 'blowout,' 'wild well' and 'crater' frequently are used without strict distinction, the following definitions are given as an aid to mutual understanding in the reading of this report:

"A blowout is a sudden expulsion of drilling fluid (mud, water, and sometimes oil) followed by an uncontrolled flow of oil, gas or water from an uncompleted well that occurs when the pressure of oil, gas or water entering the hole at some depth is greater than the pressure exerted by a column of drilling fluid in the well.

"A wild well is a well that is out of control and flowing oil, gas or water without restriction as a result of a blowout or failure of control equipment or casing. The gas and oil may become ignited, or a wild well eventually may become a crater.

"A crater is a basin-like opening in the earth's surface surrounding a well caused by the erosive and eruptive action of the gas, oil and water flowing without restriction."

These definitions should aid the reader in an understanding of these general phenomena, but to oil field workers who have worked around "wild" wells any description is superfluous.

More About Wet and Dry Tamping

May I call your attention to the fact that there apparently is something missing in your reply to O. E. R. on page 67 of the April 8 issue of The Oil and Gas Journal in regard to wet and dry tamping? The quantity of fluid is not given for the different size shots.—P. F. L.

Thank you for calling attention to this deficiency, and if the following paragraph is added after the second paragraph it will clarify this matter. This is also quoted from "Petroleum Production" by Wilbur F. Cloud.

"The quantity of fluid tamping to be placed above a charge of explosive will depend upon the nearness to the casing seat, the type and amount of explosive used, and the results desired. Some shooters have roughly estimated this as being 2 feet of water per quart when liquid nitroglycerin is used."

Another manner of estimating fluid level is suggested. The quantity of water should be somewhat proportional to the size of the shot but should also be proportional to the open hole below the pipe. Regardless of the size of the shot, where liquid stemming is used, it is dangerous to have the liquid level anywhere in the pipe as it is generally at the liquid level that pipe is damaged, therefore it is desirable the liquid level be below the casing point and if that is not practicable then it is important the well be filled to overflowing before the shot is exploded.

For all practical purposes in production shooting, damp sand is more desirable for tamping than liquid because its resistance to the force of the explosion is not a mere weight resistance since the force of the explosion tends to pack the sand against the wall of the hole to form a practically immovable body, hence a relatively small body of sand is more effective than a large body of water. Coincidentally, it must be appreciated that water is an effective vibration conductor, a quality which makes it a poor medium to use in pipe whereas sand is an effective vibration dampener.

The quantity of sand to use is largely dependent upon conditions in the well, for general purposes it may be considered that the quantity of sand in a dry hole should be not less than four linear feet of sand for each linear foot of shot (torpedo) and in a wet hole which cannot be bailed below the casing point the quantity of sand should be not less than 8 linear feet per foot of shot, remembering that while too little tamping may be used but within reasonable limits it is not possible to use too much tamping.

Producing Sand in East Texas Field

Can you tell me the name of the producing sand in the East Texas oil field, with the approximate depth and thickness? What is the approximate depth of the Carrizo sand and the thickness? Is this a producing sand?—T. S.

The producing formation in East Texas oil field is the Woodbine sand found at a depth of about 3,650 feet and it varies in thickness from a few inches to 120 feet or more in what is known as the "Fairway."

The Carrizo sand of Tertiary age outcrops in East Texas and is not productive there.

QUESTIONS ON TECHNOLOGY

By Charles K. Francis, Ph.D., Technical Editor

Analysis of Anahuac Oil From Chambers County, Texas

Will you kindly supply me with an analysis of what is known as Anahuac oil from Texas?—S. O. C.

The Anahuac field is in the Texas Gulf Coast area, Chambers County, Texas. The discovery well was completed March 2, 1935, at 7,088 feet. Subsequent wells have been drilled to around 7,100 feet. The initial production runs from 600 to 700 bbls. per well per day. The oil described was obtained from No. 1 well, Lord lease.

ANALYSIS OF FRESH OIL

Gravity, A.P.I.	36.9
Sulfur, per cent	0.18
Color	Dark green
Flash	Below 60° F.
Viscosity, Saybolt at 100° F.	43
Vapor pressure, lbs.	2.8

The Distillation Yield

		Per cent
Naphtha		27.0
Gravity, A.P.I.	53.6	
Octane No.	41.3	
Vapor pressure, lbs.	3.6	
Aromatics, per cent	18.0	
Sulfur, per cent	0.03	
Distillation:		
Per cent off at:		
158° F.	2.00	
284° F.	31.00	
Endpoint, °F.	400	
Kerosene		13.0
Gravity, A.P.I.	40.9	
Sulfur	.04	
Endpoint, °F.	507	
R.O. Vis.	475	
Flash, Tag., °F.	175	
Gas oil		35.6
Gravity, A.P.I.	33.1	
Sulfur, per cent	.08	
Endpoint, °F.	656	
Flash P.M., °F.	255	
Pour, °F.	20	
Diesel index	58	
Aniline point	175	
Fuel oil, light		18.9
Gravity, A.P.I.	27.0	
Sulphur, per cent	0.27	
Vis. at 100° F.	208	
Pour, °F.	85	
Fuel oil, heavy		5.0
Gravity, A.P.I.	18.0	
Sulfur	.51	
Vis. at 210° F.	489	

Methods for Increasing the Octane Rating of SR Gasoline

As you probably know, the crude we run gives us a low octane straightrun gasoline and wish to ask if you know what methods are recommended to correct this situation?—R. G. Y.

There are a number of straightrun gasolines made which do not test very high in octane rating. The difficulty is usually corrected by proper blending with cracked gasoline, reforming, or the addition of a knock inhibitor. Sometimes proper selection of fractions from the initial and rerun distillates will assist very much. This operation was well covered by Tongberg, Quiggle, Fenske and Fry in The Oil and Gas Journal, when they described how a Pennsylvania gasoline, from Bradford oil, having an octane rating of 42 was rerun and the best fractions selected.

The straightrun gasoline, gravity 62.3 A.P.I., initial 104° F., 10 per cent at 104°, 50 per cent at 258°, and endpoint 410° F., was separated in a tower into 248 fractions, which were tested for octane number. The investigation shows that 3 to 4.6 per cent of the charge could be selected to give a product of 73- to 80-octane number and by the addition of 2 cc. tetraethyl lead blends, representing 3 to 6.8 per cent of the charge, with 72- to 90-octane numbers were possible. Four ways for blending the fractions for the maximum conversion were studied. Blend 1A, the cut at 335° F., 76.5 per cent of the original gasoline, with 2 cc. lead per gallon, tested 71-octane number. With the addition of natural gasoline to correct the low initial this fraction should be further improved in octane number. Blend 2A, the 292° F. cut plus 1.5 cc. lead, gave 70-octane number. This was 62.5 per cent of the original gasoline. Blend 4A, the 284° F. cut, with fractions Nos. 122-142 eliminated, plus 1 cc. lead, produced a 74-octane number fuel. This was 52.6 per cent of the original. The addition of 1.5 cc. lead would convert it to Ethyl gasoline.

The fourth method involved making nine cuts which were combined into Blends 3A and 3B. Blend 3A meets airplane fuel specifications regarding vapor pressure, distillation and lead required for 80 octane number fuel. This comprises 27 per cent of the original. Most of the fractions not used in 3A are combined to form 3B, which with 2 cc. lead is suitable motor fuel. The fractions not used may be utilized for making solvents and other products.

Reference: Knock Properties of Straightrun Gasoline Fractions, Tongberg, Quiggle, Fenske and Fry, The Oil and Gas Journal, August 13, 1936, page 39.

Questions on Petroleum Technology may be sent to Dr. Charles K. Francis, The Oil and Gas Journal, Tulsa, Okla. When a copy of the answer is desired postage should be enclosed.

CHEMICALS FOR THE PETROLEUM INDUSTRY

Furfural

Use—Selective solvent and color remover.

Form—Light amber colored liquid. Technical grade.

Formula—C_4H_3O . CHO or $(CH)_3OC$. CHO.

LIMITATIONS

Boiling point	316° - 324°F.
Specific gravity	1.158 - 1.160
Melting point, °F.	—38
Flashpoint, °F.	133°
Acidity (as acetic) % max.	0.3
Aldehyde, min. %	98.5
Viscosity at 100° F. Say.	28
Vapor pressure at 100° F. mm.	10
Flashpoint, °F. closed	138

Suggested Specifications for Regular Grade Gasoline

I want to purchase for our county a quantity of gasoline known among the major companies as Regular Grade Gasoline. I do not want to rule out better grades but I want to get at least a good Regular Grade. Any suggestions that will help me take bids for the grade of gasoline known as Regular Gasoline will be appreciated by both me and the responsible companies.—J. F. M.

The quality of regular gasoline now marketed in the central states and the Mid-Continent area is fairly uniform. The Oil and Gas Journal collected samples last January of gasoline from company-owned filling stations and reported the results of the laboratory inspection of these in the issue of February 4. There were 12 companies from which the samples of regular grade gasoline were purchased. The low and high extremes of the laboratory analyses are shown in the table. From these a selection has been made, indicated in the last column, of the properties that should apply to a good gasoline of this grade.

PROPERTIES OF REGULAR GASOLINE

Test—	Survey range	Proposed specifications
Octane No.	68-71	70
	°F.	
I.B.P.	82-95	90
Recovery, per cent:		
10	110-138	130
50	196-250	240
90	344-372	362
Endpoint, max.	385-420	410
Recovery, per cent total	95-97	96
Vapor pressure, lbs.	8 3-12 6	12
Odor	....	Sweet
Doctor test	....	Negative
Sulfur, per cent max.	....	0.1
Corrosion test, copper	....	No more than trace

Note—Octane rating minimum with a tolerance of two. Distillation points minimum with no tolerance; others are maximum.

The gasoline represented in this survey, having been collected in January, may not be equally volatile in July but it is thought that the proposed specifications will be found applicable during the summer months for the area indicated.

All of the better known companies will deliver the product according to the conditions set forth in the contract. Laboratory inspections may be made when desired.

Figures Used When Quoting Price for Gasoline

In The Oil and Gas Journal prices for export gasoline as shown for example thus: 60-62 400 05½. What is the meaning of these? Kindly tell me if the "400" stands for the number of gallons in a ton of 2,240 pounds, or if not, what?—W. R. V. L.

The figures in the price table mentioned refer to 60°-62° A.P.I. gravity, 400° F. maximum temperature by the distillation test and 5½ cents per gallon.

A gasoline of 60° A.P.I. gravity weighs 6.156 pounds per gallon, or 258.5 pounds to the barrel of 42 U. S. gallons, which is equivalent to 8.665 bbls. or approximately 364 gallons per ton.

LOW COST CAPITAL

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provides these advantages over other financial arrangements:

INCREASED CREDIT
you can exceed open credit 1 to 3 times.

LOW COST MONEY
loans made at lowest available bank rates.

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no interruption of normal business routines.

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A. T. GIBSON, *President*

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FRESNO, CALIF: 2030 Anna St. • DALLAS: Santa Fe Bldg. • HOUSTON: 601 Shell Bldg. • SEATTLE: 1014 Fourth Ave. So.
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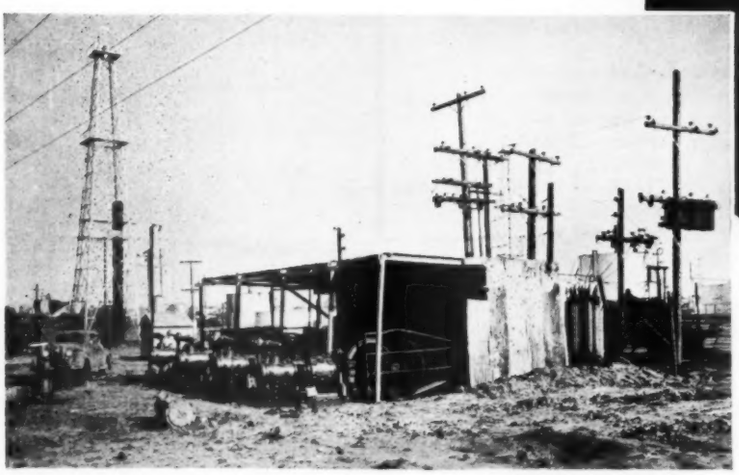

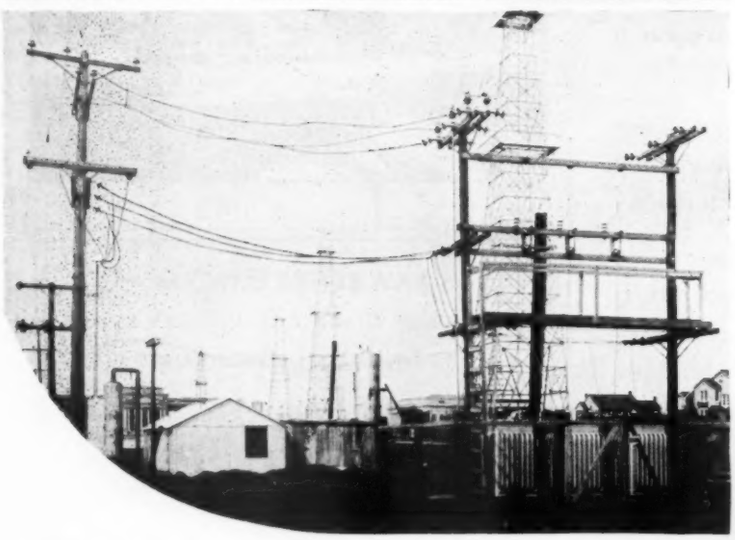

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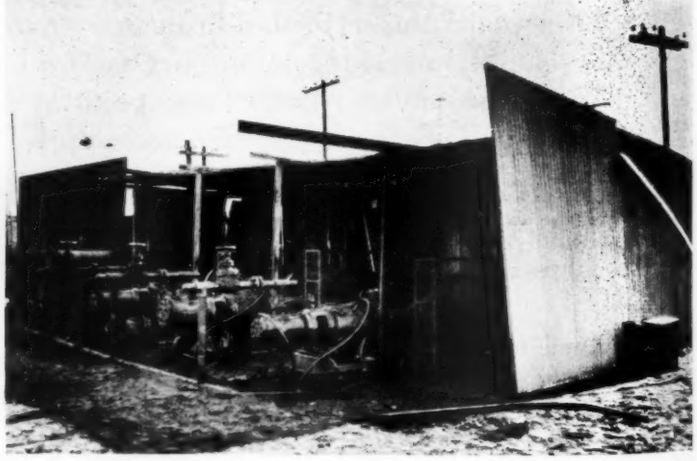

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FIELD OPERATIONS

Summarizing the Week's Developments

The Buckeye field in Michigan with 12 new completions and 11,315 bbls. of initial production had its best week since it was discovered. Production in the state advanced to 42,712 bbls. per day as an average for the week. There is considerable opposition to curtailing the production of Buckeye, even though present state production is said to be beyond the current needs of refiners.

LA.-ARK.-TEX. AREA

Possibility of deeper Trinity production in the heart of the Rodessa field in Caddo County is indicated by a saturated core from the Pettit lime in a test a quarter mile from the discovery well.

TEXAS

An important discovery is registered in the Opelika district in Henderson County, Eastern Texas, where gas and oil were uncovered in the Trinity series at a depth of 7,195 feet. The well will not be tested until after casing is run to the bottom. In West Texas, the Ellenberger (Ordovician) discovery in the Sand Hills pool in Crane County, developed indications of large production of high grade crude on short time tests. The well looks good for 2,000 bbls. per day or upwards. The Hockley County discovery well was acidized, after having been plugged back to shut off water, and it flowed 36 bbls. per hour after treatment. The best of a large number of West Texas completions was a 6,634-bbl. well in Ward County. A high-gravity oil pool was opened in western Denton County, North Texas. Southwest Texas had an unusually fruitful week. The twenty-third pool in Duval County was opened and a wildcat in the same county was flowing oil into pits. New Mirando sand production was opened in Webb County. These and other discoveries and extensions were dampened somewhat by a large number of dry holes in the big district. In the Gulf Coast area a dry gas well developing in a Wharton County test, and a new sand in the Bay City field in Matagorda County were the features.

CALIFORNIA

The Wilmington field and the Lake View section of the Midway Sunset field are mainly responsible for the large increase in production in California, each producing about 8,000 bbls. per day above its quota.

ROCKY MOUNTAIN FIELDS

A proposed Blackfoot Indian lease sale in the Cut Bank field in Montana is worrying operators who may have to drill twice as many wells this year as they did in 1936 if it is authorized and held, because of its drilling requirements.

OKLAHOMA

Two big producers found Wilcox pay in the Billings pool, Noble County, Oklahoma, and production was extended one location westward. A good producer is near completion west of the fault line in the Crescent pool, Logan County. An ordinance to permit drilling within the Tulsa city limits is sought.

KANSAS

A well one-half mile south of the Marshall pool, and 1 mile northeast of the Walters pool in Ellis County, Kansas, was showing as a producer and may connect the two areas. An outpost well three-fourths of a mile southwest of the St. John pool, Stafford County, was showing oil in cores. The Weathered pool, Cowley County, was extended southwest by its biggest producer to date.

Completions and Production

(Week Ending April 17, 1937)

	Oil	Gas	Dry	Total	1937 total comp. to date	1936 total comp. to date
Penna. Grade Fields	65	18	5	88	1,126	943
Lima Field	0	0	0	0	17	16
Central Ohio	5	11	11	27	265	74
Indiana	2	1	3	6	33	48
Kentucky	1	0	1	2	33	62
Illinois	0	0	0	0	14	14
Michigan	20	0	3	23	240	214
Kansas	49	1	13	63	631	416
Oklahoma	42	2	15	59	789	677
Texas:						
North Central Texas	45	1	36	82	789	753
West Texas	58	0	3	61	723	370
Texas Panhandle	16	3	0	19	188	199
East Texas	38	0	0	38	597	745
East Central Texas	12	0	0	12	192	72
East Texas border	3	1	0	4	126	11
Gulf Coast Texas	22	0	3	25	378	307
Southwest Texas	34	5	20	59	969	753
Total Texas	228	10	62	300	3,962	3,210
North Louisiana	2	2	1	5	118	177
Gulf Coast Louisiana	2	0	1	3	135	115
Total Louisiana	4	2	2	8	253	292
Arkansas	1	1	1	3	35	29
Montana	0	1	0	1	29	37
Wyoming	2	0	0	2	28	23
Colorado	0	0	0	0	6	10
New Mexico	8	0	2	10	218	137
Utah	0	0	0	0	0	4
California	22	1	8	31	401	320
Total United States	449	48	126	623	8,080	6,526
Total previous week	388	36	113	537		
Difference	61	12	13	86		

Outstanding Fields—Highlights

(Week Ending April 17, 1937)

Field—	Rigs up	Wells drlg.	Weekly oil completions	Initial prod.	Total No. oil wells	Daily av. prod.
TEXAS						
Anahuac	1	5	4	1,664	167	14,916
Hastings	2	14	3	1,325	158	12,937
Loma Novia	1	6	0	0	683	17,150
Seven Sisters	2	3	0	0	392	9,510
Saxet	2	37	5	1,760	404	34,850
Lopez	2	4	3	845	320	7,990
East Texas	38	122	38	1,354	22,492	460,098
Talco	7	35	7	1,714	275	23,100
OKLAHOMA						
Oklahoma City	5	16	0	0	1,107	167,225
Fitts	6	51	9	4,642	693	94,475
Olympic	5	16	4	177	291	15,450
KANSAS						
Ellis County	8	28	3	5,437	86	5,425
Reno County	8	31	6	4,702	395	21,070
Russell County	9	50	8	10,523	644	28,785
Rice County	10	52	13	12,890	798	48,115
NEW MEXICO						
Lea County	18	114	8	1,326	2,083	105,500
LOUISIANA-TEXAS						
Rodessa, La.	1	20	1	336	362	48,025
Rodessa, Tex.	8	40	3	1,106	258	41,390
Lisbon, La.	4	16	0	0	4	1,500
MICHIGAN						
Buckeye	17	60	12	11,315	43	15,712

Eastern Field Report

By STAFF CORRESPONDENT

FAYETTE COUNTY TEST MAY NOT GO TO ORISKANY SAND

PITTSBURGH, Pa., Apr. 19.—The deep test of the American Natural Gas Co. and the T. W. Phillips Gas & Oil Co. on the Perry S. Davis farm 1 mile south of Prospect in Franklin Township, Butler County, Pennsylvania, reached the top of the Oriskany sand at a depth of 5,548 feet and with a showing of about 25,000 feet of gas a day, shut down to dig a cellar under the rig and cement before drilling deeper.

In this test the top of the Corniferous lime was at 5,420 feet and the lime section, or 128 feet, had thinned out at this location from the tests north and to the west of it. The elevation of the Davis test is 1,295 feet. After cleaning out a small cave drilling will be resumed and if the gas increases, the test will be cased.

From recent reports, it is now doubtful if the test of William Snee and others on the Summit Hotel property on Chestnut Ridge in South Union Township, Fayette County, will be drilled any deeper. The gauge from the new hole shows in excess of a million feet a day, which, added to the gas from the old hole between the casings and shut in with the bradenhead, brings the total available of a million and a half feet a day.

At present 3½ miles of 4-inch line is being laid from Hopwood to the well and the gas will be turned in the line. The hole is bottomed in the Corniferous lime, total depth 6,667 feet, with the top of that formation at 6,575 feet. The Oriskany sand was not reached. It is expected that another location for a test on this structure will be made.

SOUTHWEST PENNSYLVANIA

In Beaver County, Pennsylvania, South Penn Oil Co. completed No. 14 M. Nickle in Greene Township, in the Hundred Foot sand and it is showing for 3 or 4 bbls. a day, after a shot.

In Greene County, Penn State Oil & Gas Co. deepened No. 2 H. H. Milliken, Springhill Township, to 3,178 feet, where it is showing as a small producer in the Gordon and Fifth sands.

In Richhill Township, Greene County, Burley Wright and others completed No. 2 Joseph McCracken at 2,722 feet in Gordon Stray sand. It gauged 413,600 feet a day at first, but blew down smaller.

In Washington County, Carnegie Natural Gas Co. completed No. 2 George W. Douglass, Peters Township, as a 220,000-foot gas well at 1,613 feet.

In North Strabane Township, Washington County, Keystone Gas Co. completed a gas well on the George Martin farm at 3,650 feet, the Fifth and Bayard sands. It gauged 185,000 feet a day, with a low rock pressure.

In Morris Township, Washington County, Manufacturers Light & Heat Co. is down 2,935 feet on the W. E. Craft farm, with 200 feet of fluid in the hole. Fifth sand was topped at 2,910 feet.

In Washington County, South Franklin Township, Carnegie Natural Gas Co. is drilling at 2,045 feet on the C. T. Dodd farm and 1,254 feet on the Alberta Iams farm. Dunn Mar Oil & Gas Co. is down 2,160 feet in No. 2 J. T. Baldwin. In Amwell Township, the South Penn Oil Co. is fishing at 1,206 feet on the J. Q. Zimmerman farm. Manufacturers Light & Heat Co. is drilling at 2,810 feet, deepening No. 2 A. O. Vankirk. The Carnegie Natural Gas Co. has reached 2,427 feet on the N. B. Redd farm. In Peters Township, Johnson & Henderson are reaming at 1,375 feet on the Bell heirs farm. In Mount Pleasant Township, Dempsey Oil Co. is drilling on the John Seabright farm.

In Jefferson Township, Fayette County, the Carnegie Natural Gas Co. is drilling at 1,670 feet on the George J. Elliott farm.

In Greene County, the Union Gasoline & Oil Corp. made a location for No. 8 S. H. Smith, Richhill Township. In Center Township, South Penn Oil Co. is down 2,940 feet in No. 10 Samuel Harvey. In Aleppo Township, Ross Burns is drilling at 2,757 feet on the John Phillips farm. In Center Township, Charles Mong and others are down 1,595 feet after cementing from 1,548-1,590 feet. In Richhill Township, the Natural Gas Co. of West Virginia is drilling on the O. M. Grinnage farm.

In Springhill Township, Greene County, Union Gasoline & Oil Co. is down 1,750 feet on the No. 7 Lloyd Strope. Null & Moorhead are down 1,835 feet on the John Barger farm.

Deep Tests

In Beaver County, the test of John T. Galey and others on the Minnie Weigle heirs farm in South Beaver Township is drilling at 1,800 feet. On the Beaver Falls Airport Corp. lease in this township, A. J. Wise, Jr., and others are drilling at 4,200 feet.

In Mount Pleasant Township, Washington County, Norwood Johnston and others are still fishing the cable and tools in the deep test on the James McBurney farm lost at a depth of 6,170 feet.

WEST VIRGINIA

Two producers were completed in West Virginia during the week. In Clay County, the Virginian Gasoline & Oil Corp. completed a 20-bbl. well, No. 1,248 on the Brown, Swan, Goshorn and Geary tract, Henry district, in Injun sand at 1,884 feet.

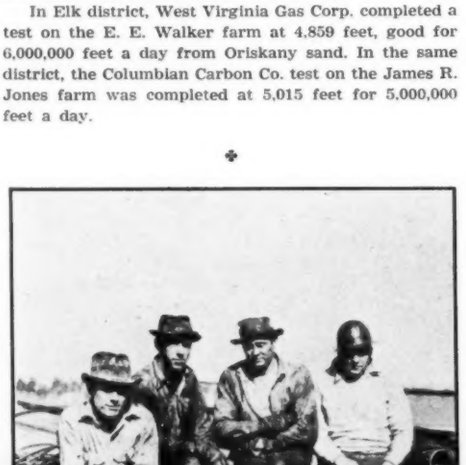
In Roane County, J. T. Campbell and others' second test on the W. S. Fouty and others lease in Curtis district started at 10 bbls. a day from Salt sand pay at 1,654-1,686 feet.

Oriskany Gas Field

Several gas wells were completed in West Virginia during the week. In Kanawha County, Poca district, George W. Lapiere completed a test on the J. W. Legg farm at 4,816 feet, 16 feet in the Oriskany sand, and it is estimated good for 6,000,000 feet a day.

In Elk district, West Virginia Gas Corp. completed a test on the E. E. Walker farm at 4,859 feet, good for 6,000,000 feet a day from Oriskany sand. In the same district, the Columbian Carbon Co. test on the James R. Jones farm was completed at 5,015 feet for 5,000,000 feet a day.

✣



Taft Well-Drilling Co.'s daylight drilling crew in California. B. T. Vorhees, G. L. Creath, W. D. Walls, Jack Welch, and John Cummings, who was missing at the time this picture was snapped

In Elk district, the Columbian Carbon Co. topped the Corniferous lime at 4,828 feet in the test on the J. C. Jordon farm and at 4,892 feet in the test on the Minia F. Stauffer farm. The United Fuel Gas Co. is down 4,931 feet in a test on the Mollie Shafer and others lease. Fourteen wells are drilling in this district.

In Union district, Kanawha County, the Glenn Oil & Gas Co. is down 905 feet in the test on the Virginia Joint Stock Land Bank. Godfrey L. Cabot, Inc., has the material on the ground for a test on the Sarah Ann Null farm.

Other Gas Wells

In Braxton County, Pittsburgh & West Virginia Gas Co. completed No. 3 W. A. Ramsey, Birch district, at 2,632 feet. It is a gas well gauging 40,700 feet a day.

In Harrison County, the Delaware Gas Co. completed No. 2 Reynolds Heirs, Eagle district, at 3,177 feet as a gas well. The Speechley sand was at 3,073-3,083 feet with 219,900 feet of gas at 3,074 feet.

In Kanawha County, the United Fuel Gas Co. completed No. 4,676 on the Mohler Lumber Co. farm in Washington district at a depth of 4,400 feet. The Big lime was at 1,468-1,676 feet; Big Injun, 1,676-1,711 feet; Berea, 2,147-2,165 feet; Brown shale, 2,165-4,303 feet, with gas gauging 796,500 feet a day at 2,770-4,298 feet.

In Lincoln County, R. H. Adkins and others completed a 500,000-foot gasser on the J. W. Jeffers farm in Sheridan district at 1,248 feet.

In Pleasants County, Adam Ward and others completed a small gas well on the Solomon Robinson farm in McKim district at 1,830 feet.

In Ritchie County, the Mud Lick Oil & Gas Co. test on the T. M. Goff farm in Union district gauged 92,000 feet a day from Injun sand at 2,128 feet. In Murphy district, South Penn Oil Co. No. 43 Sarah J. Lemon was a dry hole at 2,563 feet.

In Wetzel County the Manufacturers Light & Heat Co. test on the T. N. Scheibelhood farm in Proctor district got the top of the Maxton sand at 2,104 feet with 2,160,000 feet of gas at 2,127-2,131 feet.

Outside Deep Tests

In Big Sandy district, Kanawha County, United Carbon Co. will deepen No. 13 J. A. and M. F. Osborn from the Wier sand, in which it had been a producer, to the Oriskany sand.

In Hancock County, John T. Galey is down 4,717 feet in the test on the Rachel Talbott farm in Grant district. A gas blow, due to a pocket, drove the tools up and they are lodged in the hole.

In Wirt County, on the Burning Springs anticline 2.1 miles north of the Roberts Oriskany test, the Carnegie Natural Gas Co. has reached 800 feet on the W. C. Patterson farm. Godfrey L. Cabot, Inc., is down 5,333 feet in the deep test on the Walter Hoffman farm.

In Center district, Calhoun County, Godfrey L. Cabot, Inc., has cemented in the casing in the test on the Allen Hardman farm on the Arches Fork anticline. The casing was set 22 feet in the Corniferous lime at 6,017½ feet and the tools are now drilling at 6,022 feet.

New Work

In Braxton County, the Pittsburgh and West Virginia Gas Co. has made a location for a test on the E. B. Dobbins farm in Birch district. The elevation is 886 feet. This company has also made a location on the J. R. Stump farm, same district, elevation 850 feet.

In Cabell County, the Swann Gas Co. has a location for a test on the A. J. Nicoly heirs farm in Guyandotte district. In Lincoln County, the United Fuel Gas Co. will drill a No. 2 on the Jennie A. Jones farm in Sheridan district.

In Calhoun County, Fred Carper and Roy Foglesong

(Continued on Page 90)

Kansas Developments

By
DAL DALRYMPLE

FIELD ACTIVITY INCREASES; EXTENSION AT WEATHERED

The drilling boom in Kansas continues to gain momentum, the number of first reports and new wildcat activity increasing with each week's reports. Operations now extend from the four borders of the state, with tests in counties touching Missouri on the east, Oklahoma on the south, Colorado on the west and Nebraska on the north. The bulk of the drilling activity is along the Barton Arch, in central and western Kansas where the state's larger fields are located, and where many tests are being drilled in such proven areas as Silica, Hauschild, Trapp, Burrton, Bloomer, Bemis and Gorham. Southern and southeastern Kansas also are sharing in the new activity, with several of the old areas being redrilled for deeper production.

Two extension wells were of particular interest the past week. Aylward and others No. 1 Meis, NW cor. section 6-12-17w, may be the connecting link between the Walters and Marshall pools of Ellis County. Oil rose 1,300 feet in the hole in 18 hours from lime at 3,604-09 feet, total depth, where the crew was underreaming 6-inch casing. It is about 1 mile northeast of the Walters pool and one-half mile south of the Marshall pool.

The other interesting extensioner was Atlantic Refining Co. and Phillips Petroleum Co. No. 1 McNaughton, NW NE NE section 27-24-13w, three-fourths of a mile southwest of production in the St. John pool, Stafford County. Operators recovered a saturated core from Siliceous lime at 4,100-10 feet, and were rigging up standard tools preparatory to drilling in.

The Weathered pool of Cowley County has another big producer at Lloyd, Frost & Study No. 1 Wilson, NE NE SW section 33-31-3e, extending the producing area to the southwest. It flowed 2,804 bbls. of oil in 24 hours from Siliceous lime at 3,270 feet, making it the largest producer in the pool.

Rice County

Six wells were completed in the Hauschild-Saxman Theede district of Rice County, including two of the larger producers to be completed in that sector. Derby Oil Co. No. 8 Thode, SE cor. section 8-21-7w, topped Conglomerate at 3,357 feet; total depth, 3,371 feet; flowed 2,304 bbls. of oil in six hours, making potential of 8,732 bbls.

Atlantic Refining Co. No. 1 Gossman B, NW NE NW section 8-21-7w, made potential of 4,942 bbls. of oil, from Conglomerate topped at 3,329 feet; total depth, 3,339 feet.

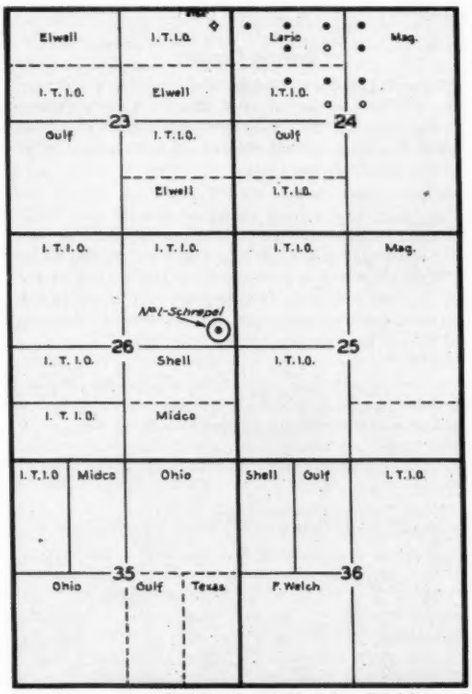
Other Theede completions: L. E. Douglass No. 4 Theede, SW cor. section 9-21-7w; Conglomerate, 3,357-72 feet, total depth; flowed 578 bbls. in six hours; potential, 2,190 bbls. Derby Oil Co. No. 1 Thode, NE SE SE section 8-21-7w; Conglomerate, 3,366 feet; total depth, 3,410 feet; shot; flowed 140 bbls. in 10 hours; later, flowed 410 bbls. in six hours on potential test, making a potential of 1,565 bbls. Aylward and others No. 3 Johnson, SE NE NE section 17-21-7w; Conglomerate, 3,379 feet; total depth, 3,399 feet, with a hole full of water; plugged back to 3,393 feet; swabbed 200 bbls. of oil in eight hours; shot; flowed 268 bbls. in six hours; potential, 1,015 bbls. Gulf Oil Corp. No. 1 Gossman, SW NW SE section 8-21-7w; Conglomerate, 3,341 feet; total depth, 3,377 feet; pumped 39 bbls. of oil in 24 hours.

Completions in the Silica field: Gulf Oil Corp. No. 6 Knop, NW NE NW section 33-19-10w; Siliceous lime, 3,284 feet; total depth, 3,304 feet; acidized; potential, 1,259 bbls. of oil. Same company's No. 15 Stoltz, Jr., NE SE NW section 5-20-10w; Siliceous, 3,306 feet; total depth, 3,322 feet; acidized; potential 1,116 bbls. of oil, with 10 per cent water. Same company's No. 16 Stoltz, Jr., SE SE NW section 5-20-10w; Siliceous, 3,316 feet; total depth, 3,325 feet; acidized; potential, 923 bbls. of oil. J. H. Tatlock No. 5 Drew, NW NE SW section 5-20-10w; Siliceous, 3,318 feet; total depth, 3,326 feet; pumped 200 bbls. of oil in four hours. Same operator's No. 6 Berscheit B, SE NW SW section 6-20-10w; Siliceous, 3,295 feet; total depth, 3,320 feet; acidized; pumped 250 bbls. of oil in 24 hours.

In the Chase area, J. D. Davis and others No. 1 McFarland, NE NW NW section 7-20-9w, found Siliceous lime at 3,284 feet; total depth, 3,286 feet; and made potential of 511 bbls. of oil.

In the Stumps sector, Transwestern Oil Co. and others No. 5 Moran, C E half W half NW section 4-18-10w, had Siliceous lime at 3,251 feet; total depth, 3,272 feet, and made potential of 428 bbls. of oil.

First reports of new work in Rice County: Continental Oil Co. and associates No. 1 Fuller, SE SE NW section



—Mid-Continent Map Co., Wichita.

Indian Territory Illuminating Oil Co. No. 1 Schrapel, section 26-20-11w, has opened a new producing area in Barton County, Kansas

12-18-8w, rigging up rotary; same operator's No. 1 Wood, NW NW SE section 12-18-8w, rigging up rotary; same operator's No. 6 Lansing, SW NW SE section 25-18-8w, building rig; Empire Oil & Refining Co. No. 1 Bredfeldt, C N half N half SW section 7-18-9w, rig; Derby Oil Co. No. 7 Thode, SW SE SE section 8-21-7w, moving in material; Garden & Haines No. 2 Gossman, NW SE NW section 9-21-7w, rig; same operators' No. 3 Gossman, SE SE NW section 9-21-7w, cellar; Dick Sage and others No. 4 Gossman, NE SW NW section 9-21-7w, cellar; Aylward and others No. 7 Johnson, NW NE NE section 17-21-7w, cellar; Ohio Oil Co. No. 2 Wood, SW NE NW section 3-20-10w, location; Sinclair Prairie Oil Co. No. 1 Knop, NE NE NW section 4-20-10w, location; Stanolind Oil & Gas Co. No. 16 Specht, SE NW SE section 6-20-10w, location; same company's No. 4 Panning, SW SW NW section 33-19-10w, location.

Cowley County

Sinclair Prairie Oil Co. No. 1 Collinson, SE NW SE section 5-34-3e, Martin area, Cowley County, found sand at 3,288 feet; total depth, 3,339 feet; and flowed 358 bbls. of oil in 24 hours, completed.

Gulf Oil Corp. No. 1 Cairns, NW NW SW section 21-32-5, had Bartlesville sand at 3,050-82 feet, total depth; plugged back to 3,081 feet; and made potential of 264 bbls. of oil, with 11 bbls. of water.

Tests starting in Cowley County were as follows: McKnab No. 1-A Files, SE SE NE section 20-32-5, building rig; same operator's No. 1 Moon, SW SW NW section 21-32-5, location; Murta & Wilson No. 1 Turner, NE NE NW section 30-32-6, wildcat, location.

Estimated Daily Production

Estimated daily average production of Kansas for the week ending April 17, and for the preceding week, was as follows:

	Barrels	
	Apr. 17	Apr. 10
Oxford City	2,400	2,725
Burrton	16,150	16,450
Ritz-Canton	5,550	5,400
Graber	2,900	2,750
Hollow-Nikkel	3,775	4,100
Voshell	2,925	2,975
Wellington	3,425	2,900
Ellsworth County:		
Lorraine-South Lorraine	4,850	4,425
Other pools	995	1,290
Rice-Barton counties:		
Bloomer	4,075	2,525
Chase	9,075	8,250
Geneseo	2,100	2,200
Raymond	3,800	2,275
Silica	20,200	15,325
Keesling	2,000	1,600
Hauschild	3,200	2,300
Miscellaneous Rice	7,740	5,510
Miscellaneous Barton	4,565	5,590
Russell County:		
Fairport	2,335	2,515
Gorham-East Gorham	3,160	2,940
Russell	2,415	2,655
Sullivan	6,700	3,570
Trapp	7,260	5,175
Miscellaneous Russell	6,915	8,395
Sedgwick County:		
Valley Center	1,205	1,320
Greenwich	915	1,295
Miscellaneous	1,930	2,170
Ellis County:		
Bemis	3,575	5,250
Miscellaneous Ellis	1,850	1,800
Kingman County	640	870
Stafford County	2,585	2,415
Greenwood County	9,500	9,500
Butler County	17,650	17,600
Other fields	24,215	22,715
Total Kansas	192,575	178,775

Woodson County

Lilly and others No. 1 Haffster, NW NE SE section 3-24-15, Woodson County, was dry and abandoned at 1,523 feet, total depth.

F. A. Gillespie & Sons No. 1 Hogueland, SE SW NE section 3-24-15, had a hole full of water in Siliceous lime at 1,853-1,900 feet, total depth, and was dry and abandoned.

Elbar Corp. No. 6 Figge, SW NE SW section 27-23-14, Winterscheid area, had a hole full of water and was dry and abandoned at 1,750 feet, total depth.

C. E. Roth and others No. 1-A Schick, C SW NE section 20-23-14, Winterscheid area, Woodson County, had Mississippi lime at 1,612-53 feet, total depth; plugged back to 1,645 feet, acidized, pumped 10 bbls. in 24 hours, completed.

Pure Oil Co. No. 9 Peak, C E half NE NE section 20-23-14, was location for a new Woodson County test. Oko Oil Co. No. 3 Weidle, C W half SW SW section 32-23-15, was drilling at 410 feet.

Butler County

A. M. Landon and others No. 1 McCaig, NE NE SE section 13-28-6, wildcat discovery well in Butler County, had sand at 2,720-40 feet, total depth; plugged back to 2,737 feet, and flowed 50 bbls. of oil in 30 minutes. It later swabbed 100 bbls. in 24 hours, pumped 90

bbls. in 24 hours and was completed. Several new tests are starting in this area.

Molk Petroleum Co. No. 11 Loomis, SW SW NW section 15-27-4e, Augusta field, topped Wilcox sand at 2,452 feet; had pay at 2,459-77 feet, total depth; was shot and pumped 74 bbls. of oil in 30 hours, completed.

Coffey County

Saco Oil Co. No. 4 Scott, SE SW NW section 13-23-14, Van Noy pool, Coffey County, topped lime at 1,594 feet; total depth, 1,625 feet; acidized and pumped 30 bbls. of oil in 24 hours.

Sumner County

Wellington pool completions included four producers and one dry hole, the latter a rarity in that prolific Sumner County sector. Stelbar Oil Corp. No. 11 Erker, C W half E half SW section 33-31-1w, topped Chat at 3,630 feet; was bottomed at 3,676 feet; acidized and made potential of 1,131 bbls. of oil. Same operator's No. 3 Rothrock, NE NE NW section 4-32-1w, found Chat at 3,644 feet; total depth, 3,699 feet; acidized and made potential of 1,040 bbls. of oil.

Transwestern Oil Co. No. 8 Murphy, NW NE SE section 32-31-1w, topped Chat at 3,662 feet; total depth, 3,697 feet; acidized and made potential of 622 bbls. of oil. Same company's No. 5 Murphy, C W half E half SE section 32-31-1w, made potential of 568 bbls. of oil after acid treatment. Top of Chat was 3,676 feet; total depth, 3,715 feet.

Stelbar Oil Corp. No. 1 Gift, SW SW NE section 28-31-1w, found Chat at 3,668 feet; topped Simpson at 4,089 feet; had a hole full of water at 4,130-33 feet, total depth, and was abandoned.

Olson Drilling Co. and others No. 1 Barr, SE cor. section 8-34-2w, wildcat, topped Chat at 4,115 feet; Viola, 4,567 feet; Wilcox sand, 4,588 feet; Siliceous lime, 4,737 feet; had a sulfur odor in cores at 4,740-50 feet, total depth, and was dry and abandoned.

Glimac Oil Co. and others No. 1 Proud, SW SE SE section 33-30-1w, wildcat, Sumner County, was building rig. Continental Oil Co. No. 4 Rothrock, SW NW NW section 4-32-1w, Wellington area, was a location. Texas Co. No. 5 Carr, SE NE NE section 5-32-1w, was a location.

Stafford County

Stanolind Oil & Gas Co. and others No. 3 Heyen A, NE NE NW section 31-22-11w, Richardson area, Stafford County, had Siliceous lime at 3,531 feet; was bottomed at 3,556 feet and made potential of 1,724 bbls. of oil.

Stanolind Oil & Gas Co. and Amerada Petroleum Corp. No. 1 Holmes, SE SE NE section 14-24-13w, St. John area, Stafford County, was a location. Lario Oil & Gas Co. and Atlantic Refining Co. No. 4 Morgan, NE NE SE section 23-24-13w, was a location. Atlantic Refining Co. No. 4 Morgan, NE NE SE section 23-24-13w, was a location. Atlantic Refining Co. No. 2 Bagley, SW SW NW section 32-22-11w, was a location. Stanolind Oil & Gas Co. No. 2 Heyen C, NW cor. section 32-22-11w, was a location.

Greenwood County

Coronado Oil Co. No. 1 Hansen, NE NE SE section 12-27-10, Willard area, Greenwood County, found water at 1,932 feet, total depth, and was dry and abandoned. Shaffer & Howell No. 17 Schneider, NW SE NW section 15-23-13, North Virgil area, Greenwood County, topped lime at 1,745 feet; total depth, 1,772 feet, and pumped 15 bbls. of oil in 24 hours. Doctor Shippey No. 1 Boone, NE NE NW section 21-26-12, an old wildcat that was deepened from 1,130 feet to 1,875 feet, where it had a hole full of water, was dry and abandoned.

A. M. Landon No. 1-A Weber, SW NW SW section 10-25-13, Quincy area, Greenwood County, had Bartlesville sand at 1,458-68 feet, with a showing of oil; Mississippi, 1,570-1,630 feet, total depth; and was dry and abandoned.

Gus Bisagno No. 3 Roglin, SE SE SW section 10-25-13, Quincy area, was drilling at 74 feet.

Reno County

Empire Oil & Refining Co. No. 3 Mauck, NW SE NW section 15-26-9w, Lerado pool, Reno County, flowed 881 bbls. of oil in six hours after acid treatment and made potential of 3,340 bbls., completed. Top of Viola lime was 4,148 feet; total depth, 4,156 feet.

Five producers were completed in the Burrton field. Barnsdall Oil Co. No. 3 Westfall A, NE SE SE section 19-24-4w, topped Chat at 3,335 feet; total depth, 3,386 feet; acidized and made potential of 1,268 bbls. of oil, with 20 per cent water. Same company's No. 2 Westfall A, C W half W half SE section 19-24-4w, pumped and flowed 954 bbls. of oil, with 15 per cent water, after acidizing. It topped Chat at 3,324 feet and was bottomed at 3,334 feet.

National Petroleum Co. No. 1 Tucker, SE SE NE section 19-24-4w, topped Chat at 3,327 feet; total depth, 3,385 feet; acidized and made potential of 1,255 bbls. of oil in 24 hours.

Sinclair Prairie Oil Co. No. 7 Seedle, NW SE NE section 17-24-4w, found Chat at 3,295 feet; was bottomed at 3,373 feet; acidized, reacidized and pumped 144 bbls. of oil, with 110 bbls. of water in 24 hours.

Ohio Oil Co. No. 5 Priddle, C N half S half SE section 17-24-4w, made a potential of 200 bbls. of oil after acid treatment. Top of Chat was 3,324 feet; total depth 3,377 feet.

Atlantic Refining Co. No. 1 Page, SE NW NW section 19-23-7w, wildcat, topped Topeka lime at 2,583 feet; Kansas City, 3,100 feet; had a showing of oil at 3,655 feet; found Chat at 3,675 feet; had a hole full of water at 3,695 feet; Viola lime, 3,965 feet; Wilcox sand, 3,995 feet; had Siliceous lime at 4,069-89 feet, total depth, and was dry and abandoned.

First reports of new work in Reno County: Shell Petroleum Corp. No. 4 Whipple, NW cor. section 14-26-9w, building rotary rig; Empire Oil & Refining Co. No. 4 Mauck, NE SW NW section 15-26-9w, rotary rig; Magnolia Petroleum Co. No. 4 Rogers, SW cor. section 9-26-4w, cellar; Olson Drilling Co. and Shell Petroleum Corp. No. 9 Goering, SW NW SW section 26-23-4w, cellar; Texas Co. No. 2 Collins, C NW NE section 9-24-4w, cellar; Barnsdall Oil Co. No. 6 Westfall A, C S half S half SE section 19-24-4w, rig; Haynes Drilling Co. and others No. 3 Mueller, C N half N half NW section 20-24-4w, rig.

Barton County

Yarnell & Spencer No. 2 Patzner, NE NW SE section 36-17-11w, Bloomer pool, Barton County, found Siliceous lime at 3,253 feet; total depth, 3,257 feet; and made a potential of 2,625 bbls. of oil in 24 hours, down two and one-half hours.

Republic Natural Gas Co. No. 5 McLean, SE NE SE section 25-17-11w, topped Siliceous at 3,295 feet; total depth, 3,311 feet; acidized, and made potential of 733 bbls.; reacidized, and made new potential of 1,349 bbls.

Texas Co. No. 7 Bloomer, NW NE NE section 36-17-11w, had Siliceous lime at 3,291 feet; total depth, 3,303 feet; acidized, and made potential of 940 bbls. of oil, with 23 per cent water.

In the Barton County sector of the Silica field, C. B. Davis and Gulf Oil Corp. No. 7 Steckel, SE NE SE section 1-20-11w, made potential of 1,229 bbls. of oil in 24 hours, from Siliceous lime topped at 3,260 feet; total depth, 3,268 feet. Stanolind Oil & Gas Co. No. 1 Panning, SW SW SE section 2-20-11w, was an abandoned location.

Indian Territory Illuminating Oil Co. No. 1 Schrapel, SE SE NE section 26-20-11w, wildcat 1 mile southwest of the Peter pool, topped Topeka lime at 2,623 feet; Kansas City, 3,025 feet; Siliceous lime, the producing horizon, 3,295 feet; total depth, 3,325 feet; acidized; pumped 497 bbls. of oil in 11 hours and 40 minutes through tubing; later made potential of 1,451 bbls. in 24 hours, and was completed. It was classed as a Peter pool extensioner.

J. B. Hanna No. 1 Luce, SW cor. section 21-20-13w, was a new wildcat in Barton County. Rig had been built. Stanolind Oil & Gas Co. No. 1 Kowalsky, NW NW NE section 11-20-11w, was a location. National Refining Co. No. 6 McLean, NE SE SE section 25-17-11w, was moving in material. Continental Oil Co. No. 1 Lamatsch, SW NE NE section 26-17-12w, wildcat, was building rig.

Ellis County

Three producers were completed in the Bemis pool, Ellis County. Deep Rock Oil Corp. No. 1 Baumer, NW cor. section 27-11-17w, south extensioner, had Siliceous lime at 3,443-51 feet, total depth, and made potential of 2,620 bbls. of oil. Margay Oil Co. No. 1 Bemis C, NW NE SW section 22-11-17w, made potential of 2,347 bbls. of oil in 24 hours from Siliceous lime, topped at 3,442 feet; total depth, 3,459 feet. Texas Co. No. 1 Bemis B, SW SW NW section 15-11-17w, north extensioner, had Siliceous lime at 3,423 feet; was bottomed at 3,426 feet, and pumped 470 bbls. of oil, with 22 bbls. of water, in 24 hours.

Champlin Refining Co. No. 1 Meier A, SE SE NW section 36-11-18w, Marshall area, topped Siliceous lime at 3,590 feet; total depth, 3,601 feet; plugged back to 3,582 feet, failed to find oil by shooting and was dry and abandoned.

New work in Ellis County: Empire Oil & Refining Co. No. 5 Bemis, SW SE SE section 21-11-17w, moving in material; same operator's No. 6 Bemis, NW SE SE section 21-11-17w, location; same operator's No. 7 Bemis, SW NE SE section 21-11-17w, location; same operator's No. 8 Bemis, NW NE SE section 21-11-17w, location; Margay Oil Co. No. 3 Bemis C, NW SE SW section 22-11-17w, cellar; Deep Rock Oil Corp. No. 3 Baumer, SW NW NW section 27-11-17w, moving in material; York State Oil Co. No. 1 Bemis, NE NE SW section 28-11-17w, location; Phillips Petroleum Co. No. 1 Staab, NW NW NE section 11-12-18w, building rig; Austin Drilling Co. No. 1 Karlin, NW cor. section 13-12-18w, wildcat, location.

Russell County

Largest of four completions in the Trapp field, Russell County, was W. I. Southern, Inc., No. 5 Michaelis, NE NW NW section 31-15-13w. It topped Siliceous lime at 3,274 feet; total depth, 3,277 feet; acidized and made potential of 2,640 bbls. of oil.

W. I. Southern, Inc., No. 7 Sellens Heirs A, SW NE SW section 30-15-13w, had Siliceous at 3,269 feet; total depth, 3,272 feet; acidized and made potential of 2,632 bbls. Same operator's No. 3 Neidens, NW NW NE section 32-15-13w, made potential of 667 bbls. of oil after acidizing Siliceous lime topped at 3,327 feet; total depth, 3,331 feet. Coralena Oil Co. No. 8 Boomhower, NE NE NW section 32-15-13w, had Siliceous at 3,330 feet; total depth, 3,333 feet; acidized and made potential of 2,546 bbls. of oil.

Other Russell County completions: In the Coralena pool, Carter Oil Co. No. 1 Josephine, SE cor. section 7-14-13w; total depth, 2,892 feet; acidized; potential, 273 bbls. of oil in 24 hours.

Barnsdall Oil Co. No. 2 Krug, SE SW NE section 34-15-13w, Eichman pool; Siliceous, 3,311 feet; total depth, 3,315 feet; swabbed 200 bbls. in six hours; acidized; potential, 622 bbls. of oil in 20 hours, with 20 per cent water.

Skelly Oil Co. No. 3 Boxberger, SW NW NE section 33-13-14w, Russell area; Siliceous, 3,291 feet; total depth, 3,298 feet; plugged back to 3,294 feet; potential, 1,236 bbls. of oil, with 15 per cent water.

In the Gorham-Sullivan area: Texas Co. No. 2 Dumler, NE NW SE section 1-14-15w; Kansas City lime, 3,050 feet; total depth, 3,110 feet; acidized; pumped 329 bbls. in 24 hours; reacidized; potential, 736 bbls. of oil, with 153 bbls. of water. Central Petroleum Co. No. 3 Foster B, SW SE NE section 3-14-15w, an old well, deepened from 3,079 feet to 3,304 feet, made potential of 2,438 bbls. of oil, recompleted. Gulf Oil Corp. No. 3 Ehrlich, NW SW NW section 1-14-15w, an old well, deepened from 3,095 feet to 3,311 feet; made potential of 830 bbls. of oil, with 250 bbls. of water, recompleted.

Darby Petroleum Corp. No. 1 Dumler D, NW SW NE section 36-14-15w, Harbaugh area, was dry and abandoned when water intruded at 3,188-91 feet, total depth.

Skelly Oil Co. and Ewers Simpson Oil Co. No. 1 Linville, SW NW NE section 2-20-10w, wildcat, topped Kansas City at 3,008 feet; Simpson, 3,295 feet; Siliceous, 3,315 feet; total depth, 3,327 feet; the hole filled with water and it was abandoned.

Hanna and others No. 1 Brothers, SE SE NW section 25-20-8w, wildcat, topped Kansas City lime at 2,892 feet; Conglomerate, 3,323 feet; Viola lime, 3,588 feet; Simpson, 3,622 feet; Siliceous, 3,689 feet; had a hole full of water at 3,689-91 feet, total depth, and was dry and abandoned.

Bradley Oil Co. and others No. 1 Ginter Heirs, NW cor. section 13-20-8w, wildcat, was an abandoned location.

New work in Russell County: Carter Oil Co. No. 3 Detrich, SE SE SW section 8-15-13w, building rotary rig; same company's No. 4 Detrich, NW SW SW section 8-15-13w, building rotary rig; W. I. Southern, Inc., No. 7 Michaelis, NW cor. section 31-15-13w, moving in material; Gulf Oil Corp. No. 4 Michaelis, SW NW SW section 32-15-13w, building rotary rig; W. I. Southern, Inc., No. 8 Boomhower, SW SE NW section 32-15-13w, drilling at 1,240 feet; Empire Oil & Refining Co. No. 9 Ehrlich, SW SE SE section 28-13-14w, building rig; Skelly Oil Co. No. 4 Boxberger, SE NW NE section 33-13-14w, cellar; Smoky Hill Oil Corp. No. 7 Miller, NW SW NE section 31-14-13w, cellar; Phillips Petroleum Co. No. 1 Carroll, SE cor. section 18-14-14w, building rig; Empire Oil & Refining Co. No. 2 Strecker, SW NW NE section 35-14-14w, moving in material; same company's No. 3 Strecker, NE NW NE section 35-14-14w, location; Darby Petroleum Corp. No. 3 Dumler B, SE SW NW section 11-14-

(Continued on Page 86)

Southwest Texas District

By
GEORGE WEBER

IMPORTANT DISCOVERIES IN WIDELY SEPARATED AREAS

CORPUS CHRISTI, Tex., Apr. 19.—The Laredo district of Southwest Texas took the spotlight during the past week, with a number of new discoveries which may be far-reaching in affecting future development of that area. The most important well is Frank Gravis No. 1 Vaello Puig, which is opening the twenty-third oil pool in Duval County. Located in the trend of the Sweden field production, and showing oil at a corresponding depth the discovery will doubtless accelerate deep exploration in the district. Also in Duval County the Thomas Estate No. 1 Parr, a wildcat near San Diego, was reported cleaning into pits, opening another pool. Webb County shared the new developments with a new pool brought in by O. W. Killam No. 1 Laurel Brothers, marking new Mirando sand production.

Other widely separated spots in Southwest Texas, such as Real County, in the Edwards Plateau; Caldwell County, in the Fault Line; Hidalgo County, in the Lower Rio Grande Valley, and Nueces and San Patricio counties, in the Lower Coastal area, all bid for attention with new discoveries and developments.

Despite the new strikes so prevalent during the week, abandonments in wildcat and field tests were high, and several fields experienced setbacks. New locations in active areas presage added activity in many sections.

Active Leasing Play

One of the district's most active leasing plays in recent months is in progress in the vicinity of the township of Benavides, where the Frank Gravis No. 1 Puig made the week's important strike. The wildcat is located in Survey 250 of the San Andres grant, approximately 3 miles south of Benavides and 4½ miles northeast of the newly opened Sweden field. The No. 1 Puig is reported to have sand at 4,762-68 feet, where a drill-stem test showed recovery of 700 feet of 43-gravity crude in 25 minutes. In formation is being withheld on the test, but casing has been set and plugs drilled for a production test over the week-end. Mexican farmers constitute the most of the landowners in the area. The sand being tested is believed by some to be the Hockley-ensis.

In the vicinity of San Diego, another well has tested oil and is in the stages of attempted completion. The Thomas Estate No. 1 Parr cored sand at 4,660-70 feet, which tested 120 feet of 45-gravity oil in 15 minutes, with a working pressure of 720 pounds. Casing has been set at a total depth of 4,672 feet and the test was last reported cleaning into pits. Located in an area long regarded by the late E. R. Thomas as a prospective oil field, the wildcat bids fair to justify his faith. To the north, another wildcat attracted attention the first of the week. H. F. Grimm No. 1 Mew cored a sand at 4,386-93 feet, but a drill-stem test recovered only salt water. The well is 12 miles northwest of San Diego and 8½ miles southeast of the Labbe field.

Webb County Discoveries

Mirando sand production was discovered in Webb County when O. W. Killam, veteran wildcatter, brought in No. 1 Laurel Brothers. Although not yet rigged up with a pump, the well is expected to make 150 bbls. per day. The sand was cored at 2,031-35 feet and 7-inch casing was set at 2,026 feet. The strike is located about 1½ miles north of the town of Oilton, in Block 29, Survey 333. Two locations have been staked in the vicinity of the new well for further development of the area.

In the same county, Killam struck again when his No. 50 Bruni, in the Cole-Bruni area, tested 105 feet of pipe line oil at 3,409-31 feet. The test is 1 mile southeast of Bruni production. Casing was set on the sand and a production test will be made this week.

In the nearby O'Hern field, J. J. O'Hern No. 2-C Benavides, on the edge of production in Block 25, made 105 bbls. per hour through tubing. The hole is bottomed at 2,880 feet.

Disappointments

Contrary to the weekly trend in Webb County, Eugene Garner No. 1 Saldivar failed to test oil in sand at 1,001-06 feet. The wildcat, in Block 12, Survey 557, of the Borrego grant, cored the sand last week with a show of oil, but after testing dry it is being drilled deeper.

Another disappointment in the Laredo district was Magnolia Petroleum Co. No. 3 Labbe ranch in Survey 221. It was abandoned at 2,919 feet after testing salt water in the sand at 2,863-71 feet. Labbe, a gas area, was recently opened to oil production by Magnolia, but the limits of the field were set by the northeast outpost test.

The main attraction in the Lower Gulf Coast was the Phillips Petroleum Co. No. 1 Schmidt, 4 miles west of Gregory in San Patricio County. It has 7-inch casing set at 5,560 feet for a production test. Sand was reported cored at 5,316-39 feet and further reports are that 100 feet of oily mud was recovered in seven minutes at 425 pounds working pressure. The wildcat is being drilled as a mystery. The actions of the operators in moving field tanks on the lease point to the expected completion of an oil well.

To the south and east, beyond Gregory, the Eleanor Oil Co. No. 1 Green met again with failure, as No. 1 Green Estate was abandoned. A number of other wildcat tests are under way in San Patricio and Nueces counties.

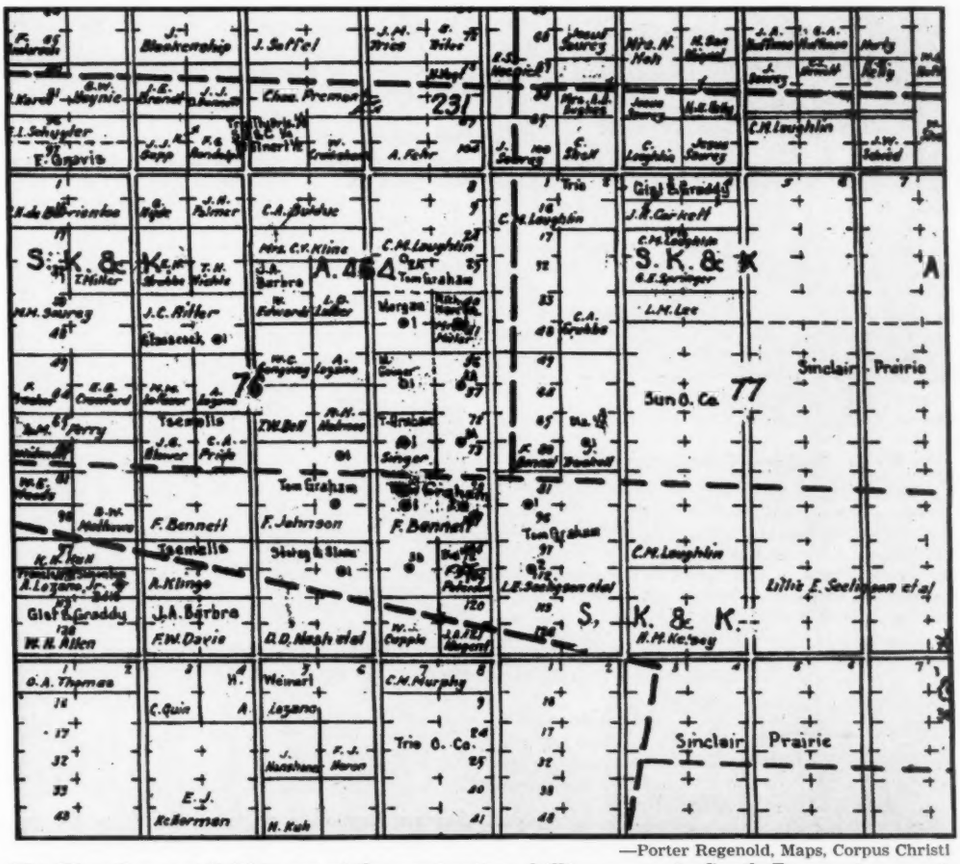
In Nueces County, new deep production was added to the Saxet field, and another producer was completed in the newly opened London field. In Saxet, Southern Minerals Corp. No. 5 Masten was completed for 142 bbls. per day in the deepest sand of the field at 6,921 feet. London's new oil well is Cosner & Cosner No. 1 Stockton, which made 192 bbls. per day, extending production in the field to the southwest. In the same area, production was apparently defined by the failure of Crown Central Petroleum Corp. No. 1 Stockton, a west offset to the discovery well, which was abandoned at total depth of 4,786 feet.

Important Development

An important development in the Lower Rio Grande Valley was the pending completion of Sterling Oil & Refining Co. No. 1 Engleman. The La Blanca field of Hidalgo County was apparently extended to the north as the edge test came in making an estimated 125 to 150 bbls. per day of distillate, together with considerable gas, characteristic of wells in the field. The Sterling well is producing from about 14 feet of sand at 7,884 feet. Pressures on the casing and tubing were 3,300 and 2,500 pounds, respectively.

The Edwards Plateau district, which has been quiet

(Continued on Page 90)



—Porter Regenold, Maps, Corpus Christi

The West Premont field is one of the most active drilling areas in South Texas at present. The field was discovered by Tom Graham, the most active operator, and has production in three sands. It is located in a highly subdivided area developed several years ago as a gardening center

Michigan Field Report

By
PAUL A. ELLIOTT

BIG WELLS IN BUCKEYE AREA THREAT TO PRICE STRUCTURE

MUSKEGON, Mich., Apr. 19.—Already more than doubled since January, or during the first three months of 1937, daily crude oil production in Michigan officially topped 1,000,000 bbls. in March for the first time since July, 1936, it was revealed in the monthly report of field runs for March announced by the Oil and Gas Association of Michigan.

Simultaneously with the monthly report last week came the record of Michigan's greatest new completion week since the days of flush production in the Crystal-Montcalm field nearly two years ago, both chiefly due to the sensational Buckeye Township field of Gladwin County, already far in the lead abong 17 recognized oil producing areas of the state.

In the single week, 11,315 bbls. of new initial Dundee oil flow, or nearly as much as the field actually produced with its daily output of 12,351 bbls. during March, was developed in Buckeye by the completion of 12 wells. Ranging from 75 to 3,840 bbls. daily, the latter the record high to date for any well in the new field, the even dozen producers continued to maintain the Buckeye average of nearly 1,000 bbls. per completion.

More clearly than ever, the necessity for proration to protect the Michigan price structure is evident. But a majority of the operators in the Buckeye field are independents, and as yet less than the required 95 per cent of the producers had signified their willingness to cooperate in the voluntary proration agreement proposed to control the output of all wells given an official potential of 500 bbls. or more daily.

March Monthly Gain

The gain for March as presented in the monthly report of wells and average daily crude runs was from 1,366 wells making 31,326 bbls. during February to 1,396 producers with a daily output of 39,351 bbls. These totals, however, are based on actual pipe line runs and do not in any way reveal the greatly increased potential output, now conservatively estimated at nearly 60,000 bbls., or about 10,000 bbls. a day in excess of the capacity of present Michigan markets.

The Buckeye field was credited with 36 Dundee producers at the close of March, making 12,351 bbls. daily. Five other leading fields, their number of wells and average daily output were: Sherman Township, Isabella County, 10 wells, making 2,371 bbls.; Ogemaw County, 188 wells, 2,390 bbls.; Vernon-Leaton-Denver, 107 wells, 2,209 bbls.; Greendale Township, Chippewa County, 276 wells, 2,322 bbls., and Clayton Township, Arenac County, 13 wells, 2,182 bbls.

Buckeye Completions

Setting the pace in Buckeye Township, Gladwin County, last week was the Buckwin Oil Co. No. 2 State, SW NW SE section 11-18n-1w, which came in making 160 bbls. an hour and was given an initial 24-hour rating of 3,840 bbls., setting a new record for the field. Dundee was topped at 3,553 feet, pay at 3,596 feet and drilling suspended at 3,625 feet.

Mammoth Producing & Refining Co. No. 2 Ockerman, NE NE SW section 11, same township, made 1,000 bbls. in 11 hours and was estimated good for 2,500 bbls. a day. Dundee was topped at 3,546 feet.

Smith and McClanahan No. 2 Brenner, SW SE SW section 11, flowed 60 bbls. an hour to start for a 24-hour rating of 1,230 bbls. at 3,620 feet, and the Sun Oil Co. No. 4 Salla, SW NW SW section 11, same township, started at 60 bbls. an hour.

The Mammoth company also brought in the No. 3-A State, SW NE NW section 14, for 850 bbls. a day at 3,630 feet. Rex Oil & Gas Co. No. 1 Hall, SE NE NE section 35, in the south Buckeye, or Oard area, made 600 bbls. a day and the Garfield Petroleum Corp. No. 1 fee, NE SW NE section 14, in the northeastern, or Wicklund section with the others previously mentioned, made an estimated 500 bbls. a day.

Gordon Oil Co. No. 2-A Haven, SE SW NW section 36 (southeastern section) was good for 200 bbls. daily. F. O. Whitelow added 145 bbls. initial by completing the No. 1 Fritzwater, SE SE SE section 26; in the same section, the Marshall H. Bauman No. 1 Thompson, previously drilled into the Dundee, made about 100 bbls. daily as an edge test at the southern extremity of the north pool.

In marked comparison with the No. 4 on the Salla lease, the Sun Oil Co. Nos. 2 and 3 Salla, the former located SE SW SW and the latter NE SW SW, both in section 11, Buckeye, were rated small producers of 75 bbls. each, though they probably will be deepened and treated with acid before final completion.

Isabella County

The best well outside of Buckeye was brought in by the Pure Oil Co. whose No. 2 Ryckman, NE SE NE section 33-15n-6w, Sherman Township, Isabella County, made 450 bbls. initially at 3,627 feet, Dundee formation.

Wicklund Development Co., which opened the more prolific northeastern Buckeye section, also picked up 125 bbls. a day in the No. 2-B Durnin, C N half SW NW section 23-16n-4w, in the old Vernon Township, Isabella County field.

G-Lee-P Oil & Development Co. was estimated to have added 150 to 200 bbls. daily in the No. 7 Grubb, NW SW SW section 2-14n-3w, Chippewa Township, same county. It had 2,000 feet of oil in the hole and was being prepared for 500 gallons of acid.

Midland County

Pure Oil Co. No. 20 Bond-Root, C S half NE NW section 3-13n-2w, Jasper Township (Yost), made 260 bbls. after acid treatment in the Dundee drilled to 3,456 feet. Same company from the No. 4-D Rayner, C S half NE NE section 11, also Jasper Township, was rated good for 120 bbls. a day in the Dundee bottomed at 3,440 feet.

Pure No. 10-A Iva E. Bond, S half SE NW section 7-13n-1w, Porter Township, went on the pump for 50 bbls. a day after acid treatment. It was drilled to 3,448 feet but plugged back 4 feet before acidizing.

One of the three dry holes of the week was the Pure No. 3 Kidder test, C W half NE NE section 17-12n-2w, Greendale Township, same county, completed at 3,591 feet with no show recorded.

West Michigan

A second well, virtually proving the existence of at least a small Upper Traverse pool in Salem Township, Allegan County, was brought in by the Muskegon Development Co. when the No. 1 Holthof and Sawyer, NE NW SE section 17-4n-13w, was rated good for 40 to 50 bbls., flowing naturally, and 300,000 feet of gas through the 6⅝-inch casing.

The new test is located about half a mile from Lentz & Miller, Inc. No. 1 Roy Raab, which recently was reported increased to about 300 bbls. daily by an extra heavy charge of acid, about 1,000 gallons. It was still making about 100 bbls. as the week closed. Lentz & Miller have started a third test in the Allegan field to be known as the No. 1 Hardy, NW NW section 21, about half a mile southeast of the Raab well.

The No. 1 Holthof and Sawyer was to be acidized early this week. First Traverse gas was encountered at 1,576 feet, oil at 1,580 feet and the hole drilled 6 feet farther in.

Clayton-Arenac

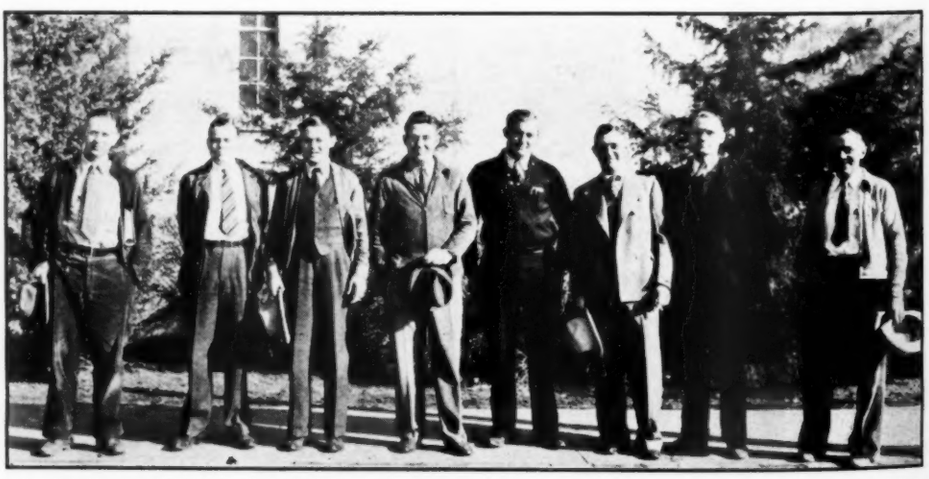
On the discovery lease of the Clayton Township, Arenac County field, McClanahan Oil Co. completed No. 3 Seignious, SW SW SE section 3-20n-4e, for 20 bbls. an hour, or about 400 bbls. daily from the Dundee.

The Devonian Oil Co. No. 1 Peavy, which created a sensation the week before by gradually increasing in output from 769 bbls. the first 24 hours after acid treatment to a peak of 1,610 bbls. the fourth or fifth day, settled back to 1,400 to 1,450 bbls. daily for one of the larger wells in this new field.

New Location

Charles Weller was preparing to start a deep test

(Continued on Page 97)



Several branches of the oil industry are represented in this group taken at Great Bend, Barton County, Kansas. They are: A. E. Palmer, scout, Shell Petroleum Corp.; Pat M. Broach, scout, Stanolind Crude Oil Purchasing Co.; O. N. Hill, scout, Shell Petroleum Corp.; Fred S. Dewel, Bovaird Supply Co.; P. E. Morris, drilling contractor; C. R. Bickel, superintendent, Shell Petroleum Corp.; Jim Davidson, Houston-Doughty Lumber Co., and Joe A. Neidig, scout, Skelly Oil Co.

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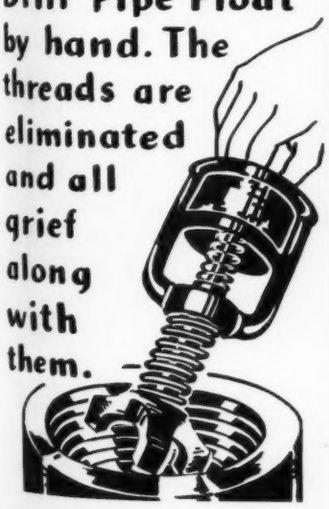


Among Gulf Coast Drilling Contractors

A revival of the boom days in the old Jennings field in Acadia Parish, Coastal Louisiana's oldest producing field, has resulted in a demand for more drilling outfits as more locations are made each week. Jimmy Glassell of Shreveport purchased two new unitized rotaries the past week and they are being moved in. Glassell recently completed No. 1 Trusel at 7,021 feet for an initial production of 482 bbls. per day through a 12/64-inch choke. This revival of activity has been brought about within the past few months by the discovery of prolific production on the west flank of the dome by the Superior Oil Producing Co. At the present time there are nine active tests, and locations for three more have been made.

George Echols is preparing to retest his No. 3 Bennett, which extended production from the Heyser field in Calhoun County to Victoria County the past week. After flowing at the rate of 8½ bbls. per hour through a three-sixteenth inch choke, the well began showing an increase in pressure and the flow turned to distillate. The perforations at 5,467-70 feet have been cemented off and the casing is being reperforated about 1 foot lower. No. 4 Bennett, northeast of No. 3 is being rigged up. In the meantime, one well is being completed at the Gillis field for the Fohs Oil Co. and one rotary is active in the Flour Bluff field for the Gem Oil Co.

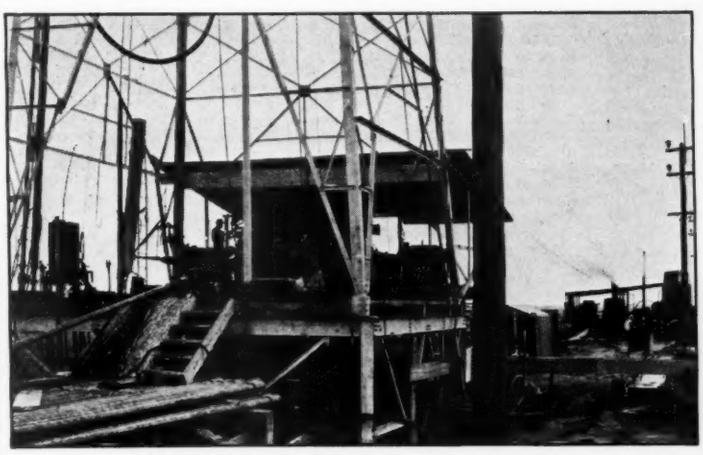
Smith & McDannald are moving a string of tools to the Lakeview area, Wharton County, for themselves and will drill No. 1 Hurlbut in the I.&G.N. Survey No. 23. In the Jennings field, Shell Petroleum Corp. No. 2 Community was completed for a large gasser at a plugged back depth of 7,360 feet. Other work is being done at South Houston, Long Lake, Port Barre, St. Martinsville and the Dickinson fields for the Stanolind Oil & Gas Co., Pan American Production Co., Pure Oil Co. and Tide Water Oil Co.

Thompson Bros. are scheduled to test J. K. Dorrance No. 3 Wing at the Segno field in Polk County, and the rig will be moved over for No. 4 Wing. No. 3 Wing is bottomed in sand and shale showing oil in the Upper Cockfield at 5,187 feet. In the same field and located a half mile east of production H. B. Jordan who is drilling Humble Oil & Refining Co. No. 1 Kirby Lumber Co. has pulled screen and liner at 5,202 feet after testing salt water and oil and is drilling below 5,384 feet in search of the Conroe sand.

O. W. Dyer has spudded his second well in the northwest extension area of the Dickinson field for the Atlantic Refining Co. and has two rigs operating in the McCampbell field in Aransas County for the same company.

Loffland Bros. are moving in to the Shepperds Mott dome in Matagorda County for the Continental Oil Co.; are drilling below 8,900 feet on another wildcat for the same company at Citrus Grove; have two rigs running at Tepetate for the same company are are operating for the Stanolind Oil & Gas Co. at the West Beaumont and Hastings field in Jefferson and Brazoria counties.

Arch Rowan of the Rowan Drilling Co. recently returned from a business trip to the east where he purchased a large diesel-electric heavy duty rotary rig which will probably be moved to the West Texas district where he has several rigs running. He has two rigs running in the Amelia field for Humble Oil & Refining Co.



General view of R. B. (Cap) Fields' large diesel-electric rotary located on abandoned Galveston-Houston Electric Railway right of way in the southern part of the Dickinson field, Galveston County. This is the largest type of diesel-electric rig ever operated on the Gulf Coast. It was recently moved from the Oklahoma City field where two producers were completed

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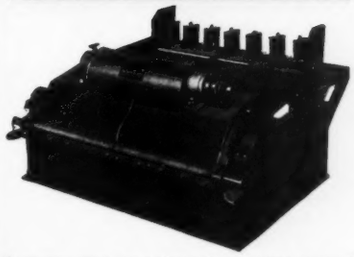

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Rocky Mountain Area

By
T. R. INGRAM

CUT BANK OPERATORS WORRY OVER PROPOSED LEASE SALE

DENVER, Colo., Apr. 19.—The Continental Oil Co. No. 8 Buckeye, on the Wellington dome, Colorado, is temporarily abandoned after having tested the Sundance and plugged back to the Muddy. The Mountain Fuel Supply Co. No. 1 Donnell, a semiwildcat on Powder Wash, is at a critical stage and showing some gas. The South Park Oil Co. No. 1 Lemar in Park County, a discovery, looks commercial at present depth.

The Mid-Continent Petroleum Corp. has taken a block of leases in Albany County, Wyoming, near the Colorado line. Wyoming is showing an increase in drilling operations with the opening of spring weather. The Osage field is drawing oil from storage and is producing more than the average.

Operators in the Cut Bank field in Montana are much concerned with the possibility of having to drill twice as many wells as last year if proposed Indian lease sale is authorized. One gas well was completed in the Whitlash field in Liberty County.

NEW MEXICO

Eight wells were completed in Lea County, with abandonments in Eddy and Chaves counties.

In the Monument field, Gulf Oil Corp. No. 5 Anderson, C SE NW section 17-20-37, topped pay at 3,824 feet; total depth, 3,865 feet, and flowed 513 bbls. of oil naturally through tubing in five hours, with 2,114,000 feet of gas. Humble Oil & Refining Co. No. 5 Laughlin, section 4-20-37, flowed 55 bbls. of oil in two hours after acid treatment. It topped pay at 3,840 feet and was bottomed at 3,880 feet. Texas Co. No. 5 State-Aggies, SE NE SE section 31-20-37, topped pay at 3,740 feet; total depth, 3,855 feet; flowed 4 bbls. of oil an hour; acidized, flowed 13 bbls. an hour; reacidized, and flowed 120 bbls. in 15 hours through tubing.

Completions at Eunice included Continental Oil Co. No. D-15-8 State, C SE SE section 15-21-36. It topped lime at 3,750 feet; total depth, 3,854 feet, and flowed 99 bbls. of oil an hour, naturally, through tubing choke. Shell Petroleum Corp. No. 2-H State, CWL NE NE section 13-21-35, topped pay at 3,820 feet; was bottomed at 3,925 feet; flowed 8 bbls. of oil an hour through choke; acidized, and flowed 175 bbls. in 12 hours through choke.

Other Lea County completions: J. C. Clower No. 2 Turner, SW SW SE section 29-21-37, flowed 96 bbls. of oil naturally through tubing in 24 hours from pay topped at 3,713 feet; total depth, 3,752 feet. Gulf Oil Corp. No. 11-B Mattern, NE NE SE section 30-21-37, topped pay at 3,777 feet; total depth, 3,813 feet; flowed 74 bbls. of oil in 10 hours through tubing; acidized, and flowed 178 bbls. in 21 hours. Tide Water Oil Co. No. 2 Walden, C SW NE section 21-22-37, had pay at 3,555 feet; was bottomed at 3,610 feet and after a shot flowed 194 bbls. of oil in 24 hours through tubing.

In Eddy County, McGinley & Hartwell No. 7 Mann, SW cor. section 4-18-27, flowed 3 bbls. of oil and 35 bbls. of water in 24 hours after acidizing, and was abandoned at 2,285 feet, total depth.

Elliott and others No. 1 State, NW section 16-8-23, had a hole full of salt water at 775 feet and was dry and abandoned.

Monument Area

Gulf Oil Corp. No. 2 Hatchett, C SW NW sec. 33-19-37. T.D. 3,905 ft.; cleaning out.
Amerada Pet. Corp. No. 4 Phillips, C NW NE sec. 1-20-36. T.D. 3,828 ft.; set 5½-in. csg. 3,822 ft.
Amerada Pet. Corp. No. 1-X State, C NW SW sec. 16-20-37. Drlg. 3,586 ft.
Barnsdall Oil Co. No. 8 Cooper, C SE SE sec. 12-20-36. T.D. 3,794 ft.; to set csg.
Continental Oil Co. No. 16-C-1 State, C SW NW sec. 16-20-37. T.D. 3,809 ft.; waiting on motor.
Gulf Oil Corp. No. 1 Bates, C SE SE sec. 26-19-36. T.D. 3,822 ft.; S.D. for orders.
Phillips Pet. Co. No. 1 Edna-State, C NW NW sec. 30-20-37. T.D. 3,751 ft.; set 7-in. csg. 3,725 ft.
Phillips Pet. Co. No. 1 Mexico-State, C NE NE sec. 30-20-37. T.D. 3,834 ft.; running tubing.
Repollo Oil Co. No. 4-A Phillips, NW SW sec. 31-19-37. T.D. 3,846 ft.; set 7-in. csg. 3,840 ft.
Tide Water Oil Co. No. 2 Laughlin, C NE SW sec. 4-20-37. Drlg. 2,952 ft.
Amerada Pet. Corp. No. 3-V State, NE sec. 36-19-36. Drlg. 3,109 ft.
Amerada Pet. Corp. No. 3-F State, SW sec. 36-19-36. T.D. 3,798 ft.; set 6⅝-in. csg. 3,788 ft.
Shell Pet. Corp. No. 3-M State, NE sec. 1-21-36. T.D. 3,757 ft.; set 7-in. csg. 3,707 ft.
Amerada Pet. Corp. No. 2-A Byrd, sec. 12-20-36. Drlg. 1,580 ft.
Amerada Pet. Corp. No. 2 Laughlin, sec. 9-20-37. T.D. 2,450 ft.; set 8⅝-in. csg. 2,442 ft.
Gulf Oil Corp. No. 6 Anderson, sec. 17-20-37. T.D. 3,805 ft.; to drill in.
Gulf Oil Corp. No. 1 Bell-State, sec. 36-20-36. T.D. 3,850 ft.; testing.
Gulf Oil Corp. No. 2-F Bell-State, sec. 36-20-36. T.D. 1,160 ft.; to set csg.
Gulf Oil Corp. No. 3-F Bell-State, sec. 36-20-36. T.D. 3,740 ft.; set 5⅞-in. at 3,734 ft.
Humble O. & R. Co. No. 3-F State, sec. 17-20-37. Drlg. 3,622 ft.
Phillips Pet. Co. No. 1 Hudson-State, sec. 30-20-37. Drlg. 2,957 ft.
Phillips Pet. Co. No. 1 Quapaw-State, sec. 10-20-37. Drlg. 3,669 ft.
Repollo Oil Co. No. 4 Byrd, sec. 11-20-36. T.D. 3,800 ft.; testing.
Texas Co. No. 2-K State, sec. 18-19-37. Drlg. 3,049 ft.
Amerada Pet. Corp. No. 6 Byrd, C SW SE sec. 12-20-36. T.D. 2,400 ft.; set 8⅝-in. csg. 2,392 ft.
Gulf Oil Corp. No. 1-C Kutter-State, C SE NE sec. 18-19-37. Derrick.
Gulf Oil Corp. No. 7 Anderson, C SE NE sec. 17-20-37. Drlg. 2,590 ft.
Gulf Oil Corp. No. 2 Smith, C NE NE sec. 34-19-36. Drk.
Shell Pet. Corp. No. 2-E State, C NW NW sec. 13-20-36. Drlg. 2,020 ft.
Shell Pet. Corp. No. 4-K State, C NW NE sec. 36-20-36. T.D. 1,098 ft.; S.D. for fuel.
Tide Water Associated Oil Co. No. 1-J State, C SW NW sec. 17-19-37. T.D. 2,721 ft.; S.D. for repairs.
Repollo Oil Co. No. 7 Barber, sec. 8-20-37. Drlg. 3,776 ft.
Continental Oil Co. No. 4-B-18 Britt, sec. 18-20-37. T.D. 1,081 ft.; set 7⅝-in. csg. 1,056 ft.
Continental Oil Co. No. 4-A-11 Sanderson, sec. 11-20-36. Drlg. 1,235 ft.
Gulf Oil Corp. No. 1-G Bell-State, sec. 13-20-36. Drlg. 2,540 ft.
Ohio Oil Co. No. 3 Laughlin, sec. 9-20-37. T.D. 1,235 ft.; set 9⅝-in. csg. 1,229 ft.
Ohio Oil Co. No. 1 State-Hansen, sec. 16-20-37. Drlg. 1,190 ft.
Texas Co. No. 7 Lieu-Lands, sec. 20-20-37. Drlg. 2,770 ft.
Amerada Pet. Corp. No. 1-A Byrd, C NE SW sec. 12-20-36. T.D. 3,800 ft.; set 6⅝-in. csg. 3,799 ft.
Amerada Pet. Corp. No. 4-F State, C SE SW sec. 36-19-36. Drlg. 595 ft.
Amerada Pet. Corp. No. 4-B State, C SW NE sec. 36-19-36. Derrick.
Stanolind O. & G. Co. No. 3 Gillully, sec. 24-20-36. T.D. 3,690 ft.; set 7-in. csg. 3,680 ft.
Repollo Oil Co. No. 3 Roach, sec. 21-20-37. T.D. 3,865 ft.; testing.
Amerada Pet. Corp. No. 2-M State, sec. 13-20-36. Cellar and pits.
Amerada Pet. Corp. No. 4-V State, sec. 36-19-36. T.D. 2,392 ft.; set 8⅝-in. csg. 2,384 ft.
Amerada Pet. Corp. No. 1-Y State, sec. 17-20-37. T.D. 205 ft.; set 12½-in. csg. 201 ft.
Amerada Pet. Corp. No. 2-Y State, sec. 17-20-37. Drk.
Amerada Pet. Corp. No. 1-Z State, sec. 13-20-36. Drk.
Amerada Pet. Corp. No. 2-Z State, sec. 13-20-36. Drk.
Ennishope Oil Co. No. 2 Wulff-State, sec. 17-20-37. T.D. 3,860 ft.; testing.
Gulf Oil Corp. No. 8 Ramsey, sec. 17-20-37. T.D. 300 ft.; set 10-in. csg. 290 ft.
Gulf Oil Corp. No. 2-D Orcutt, sec. 13-20-36. Drlg. 2,545 ft.
Gulf Oil Corp. No. 3 White, sec. 25-20-36. Derrick.
Phillips Pet. Co. No. 2 Hobbs, sec. 18-20-37. Derrick.
Phillips Pet. Co. No. 3 Mexico, sec. 18-20-37. Derrick.
Skelly Oil Co. No. 4 Van Etten, sec. 9-20-37. Drlg. 3,110 ft.
Atlantic Prod. Co. No. 1-O State, sec. 32-20-37. R.U.R.
Empire Oil & Ref. Co. No. 1 Persons, sec. 27-19-36. Loc.
Skelly Oil Co. No. 5 Van Etten, sec. 9-20-37. Loc.
Skelly Oil Co. No. 6 Van Etten, sec. 9-20-37. Loc.

Eunice Area

Getty Oil Corp. No. 1 State D, C SE NE sec. 32-20-37. T.D. 3,860 ft.; S.D. for orders.
Gulf Oil Corp. No. 4 Leonard, C SW NE sec. 22-21-36. T.D. 3,905 ft.; P.B. to 3,892 ft.; shut in.
Jim Murray No. 4 State-Wallace, sec. 3-21-36. Cellar.
Gulf Oil Corp. No. 1 Bell-Ramsey B, C SW SW sec. 29-20-37. T.D. 3,840 ft.; C.O.
Amerada Pet. Corp. No. 4-W State, C SE SE sec. 30-20-37. T.D. 3,820 ft.; testing.
Gulf Oil Corp. No. 12-C Arnott-Ramsey, C NW SE sec. 21-21-36. T.D. 3,780 ft.; set 5½-in.
Atlantic Ref. Co. No. 5 State L, C NW NW sec. 3-21-36. T.D. 3,845 ft.; testing.
Gulf Oil Corp. No. 2 White, C NE SE sec. 25-20-36. T.D. 3,845 ft.; testing.
Mid-Continent Pet. Corp. No. 1 Reener, C NW NW sec. 29-20-37. T.D. 3,831 ft.; testing.
Tide Water Associated Oil Co. No. 1 Marshall, C SW NE sec. 13-21-36. T.D. 3,870 ft.; testing.
Ohio Oil Co. No. 6 McDonald, C SE SW sec. 16-22-36. Cellar.
Oil Well Drlg. Co. No. 1 State A, C NW NW sec. 16-22-36. Drlg. 3,800 ft.
Stanolind O. & G. Co. No. 1 Owen, NW sec. 3-22-37. Drlg. 2,860 ft.
Devonian Oil Co. No. 2 State, SE sec. 3-21-36. Drlg. 3,771 ft.
Continental Oil Co. No. 30-A-4 Lockhart, sec. 30-21-36. Drlg. 3,000 ft.
Two States & Southern Pet. Expl. No. 3 McQuatters, C SW NE sec. 11-21-36. T.D. 1,340 ft.; set 7⅝-in. csg.
Gulf Oil Corp. No. 13 Arnott-Ramsey, sec. 21-21-36. Drk.
Humble O. & R. Co. No. 1-G State, sec. 23-21-36. Drlg. 1,429 ft.
Texas Co. No. 4 Rector, sec. 30-21-36. T.D. 1,600 ft.; drlg. plug.
Gulf Oil Corp. No. 2-E Bell-State, sec. 11-21-36. Derrick.
Gulf Oil Corp. No. 3 Campbell, sec. 7-21-36. T.D. 3,914 ft.; P.B. 3,904 ft.; to reacidize.
Gulf Oil Corp. No. 4 Campbell, sec. 7-21-36. Derrick.
Empire Oil & Ref. Co. No. 1-G State, sec. 2-21-36. Loc.
Gulf Oil Corp. No. 5 Collins, sec. 14-21-36. Loc.
Gulf Oil Corp. No. 8-C Orcutt, sec. 6-21-36. Derrick.
Stanolind Oil & Gas Co. No. 1 McQuatters, sec. 11-21-36. T.D. 2,597 ft.
Stanolind Oil & Gas Co. No. 1-A Langlie, sec. 11-21-36. Cellar and pits.

Chaves County

J. & L. Drlg. Co. No. 1 Hurd, C SE NW sec. 14-11-26. T.D. 457 ft.; S.D. for repairs.
English & Harmon No. 1 Billingslea, SE sec. 9-15-29. T.D. 472 ft.; set 10-in. at 467 ft.
Warman Oil Co. No. 1 Weldan & Hoar, sec. 9-14-25. T.D. 1,732 ft.; S.D.

Dona Ana County

Juels C. Bertrand No. 1 Casad Permit, sec. 24-26-5e. T.D. 40 ft.; preparing to drill water well.

Hobbs Area

Stanolind O. & R. Co. No. 9 State, sec. 9-19-38. T.D. 1,600 ft.; waiting on csg.
Stanolind O. & R. Co. No. 7-X Thorpe, sec. 18-19-37. Drlg. 3,910 ft.

Sims Area

Skelly Oil Co. No. 1 R. R. Simms C, C SE SW sec. 3-23-37. T.D. 3,388 ft.; drlg. by tools at 3,368 ft.
Penrose & Rowan No. 3 Cary, C SE NW sec. 22-22-37. Drlg. 3,615 ft.
W. H. Street et al No. 1 Wood, C W½ SE NE NE sec. 22-22-37. T.D. 3,654 ft.; C.O. after shot.
J. E. Farrell No. 1-A Walden, C SW NW sec. 15-22-37. T.D. 3,551 ft.; moving in standard tools.
Skelly Oil Co. No. 4 Baker, C SW NW sec. 27-22-37. T.D. 3,610 ft.; C.O.
Texas Co. No. 1 Falby, C NE NW sec. 8-22-37. T.D. 3,750 ft.; testing.
Skelly Oil Co. No. 1 Sticher, sec. 4-22-37. Drlg. 3,070 ft.
Gulf Oil Corp. No. 1 Davis, sec. 8-23-37. Drlg. 470 ft.
J. E. Farrell No. 2-B Walden, C NE SW sec. 15-22-37. T.D. 405 ft.; S.D. for repairs.
J. E. Farrell No. 2-C Walden, C SE SW sec. 15-22-37. Drlg. 1,335 ft.
Empire Oil & Ref. Co. No. 2 Walden, sec. 21-22-37. Loc.
Gulf Oil Corp. No. 1 Cole, sec. 16-22-37. Loc.
Skelly Oil Co. No. 2 H. O. Sims, sec. 4-23-37. Loc.
Skelly Oil Co. No. 5 R. R. Sims, sec. 3-23-37. Loc.
Tide Water Oil Co. No. 3 Walden, sec. 21-22-37. Moving in tools.
Skelly Oil Co. No. 2 G. W. Sims, sec. 9-23-37. Drlg. 2,580 ft.

Cooper Area

Southern Oil Corp. No. 1 Gates, C SW NW sec. 23-24-26. T.D. 3,514 ft.; S.D. for orders.
Amerada Pet. Corp. No. 3 Isabell, C SW NE sec. 15-24-36. T.D. 1,503 ft.; set 8⅝-in. csg. 1,493 ft.

Lea County—Miscellaneous

Brown & Reynolds No. 1 Parcell, C NW SE sec. 8-21-38. Wildcat; T.D. 4,397 ft.; P.B. 4,386 ft.; testing.
Amon G. Carter No. 2 Elliott, C NE SW sec. 22-22-37. T.D. 3,622 ft.; fishing.
Magnolia Pet. Co. No. 1 State G, NW NW NE sec. 24-17-34. T.D. 4,905 ft.; P.B. 4,475 ft.; running tubing.

Continental Oil Co. No. 1 Wantz, C SW SW sec. 21-21-37. Drlg. 3,820 ft.
Culberson-Irwin & Stovall No. 3 Stuart, NE SE SW sec. 10-25-37. Drlg. 3,253 ft.
Ohio Oil Co. No. 5 State-McDonald, sec. 16-22-36. T.D. 6,202 ft.; P.B. to 3,820 ft.; testing.
Stanolind O. & G. Co. No. 1 Meyers, sec. 22-24-37. T.D. 3,553 ft.; fishing.
Texas Co. No. 1 Alexander, sec. 5-21-37. T.D. 3,755 ft.; C.O. after shot.
Sun Oil Co. No. 2 Stewart, C SW NE sec. 15-25-37. Drlg. 3,318 ft.
Shell Pet. Corp. No. 2 Black, C SW SE sec. 21-24-27. T.D. 3,483 ft.; to run tubing.
J. L. Perry No. 1 Elliott, SE cor. sec. 19-21-37. Drk.
Samedan Oil Co. No. 3 Hughes, sec. 4-23-37. Drlg. 3,463 ft.
Texas Co. No. 2 Black, sec. 21-24-37. T.D. 2,975 ft.; C.O.
Gulf Oil Corp. No. 1 Hardy, C SE SW sec. 20-21-37. T.D. 3,657 ft.; set 7-in. 3,650 ft.
Mack & Stauffer No. 1 Grizzell, C NW NE sec. 8-22-37. T.D. 3,736 ft.; to acidize.
Anderson-Prichard Oil Corp. No. 1 Wells, C SE SE sec. 5-25-37. Drlg. 2,373 ft.
Herschback et al No. 1 Alston, C SW NE sec. 31-17-37. T.D. 2,020 ft.; R.U. cable tools.
Continental Oil Co. No. 4 McCallister A, C N½ NE SE sec. 24-26-36. T.D. 3,245 ft.; P.B. 3,224 ft.; testing.
Williams & Cockburn No. 3 Miller, C SW SW sec. 23-17-32. Drlg. 3,780 ft.
Ohio Oil Co. No. 1 Grizzell, C SW SE sec. 5-22-37. Drlg. 2,625 ft.
Mid-Continent Pet. Corp. No. 1 Boren, C NE NE sec. 20-22-36. T.D. 3,788 ft.; testing.
Stanolind O. & G. Co. No. 2 Myers, SW sec. 4-24-37. Drlg. 750 ft.
Stanolind O. & G. Co. No. 3 Myers, SE sec. 4-24-37. Drk.
Gulf Oil Corp. No. 1 Boyd, sec. 23-22-37. T.D. 1,150 ft.; set 8¼-in. csg. 1,143 ft.
Gulf Oil Corp. No. 2 King, sec. 28-21-37. Drlg. 2,930 ft.
Gulf Oil Corp. No. 1 Shahan, sec. 33-25-37. Wildcat; drlg. 2,010 ft.
Gulf Oil Corp. No. 1 Woolworth, sec. 30-24-37. Wildcat; T.D. 2,618 ft.; fishing.
Repollo Oil Co. No. 2-B Stuart, sec. 10-25-37. Drlg. 2,148 ft.
Maljamar O. & G. Co. No. 3 Mitchell, C SE NE sec. 20-17-32. Bldg. roads.
Texas Co. No. 1 Fristoe, C SW NW sec. 35-24-37. Drk.
Stanolind O. & G. Co. No. 4 Meyers, sec. 22-24-37. Cellar.
Stanolind O. & G. Co. No. 5 Meyers, sec. 22-24-37. Cellar.
Magnolia Pet. Co. No. 1 Hanna, sec. 7-26-38. Wildcat; T.D. 900 ft.; S.D. for water.
Empire Oil & Ref. Co. No. 3-A Closson, sec. 6-22-36. Drk.
Gulf Oil Corp. No. 1 Knight, sec. 27-24-37. Loc.
Harry Leonard No. 1 Siddall, sec. 6-20-38. Wildcat; spudded.
Skelly Oil Co. and Devonian Oil Co. No. 2 Christmas, sec. 21-22-36. Loc.
Eppenauer Drlg. Co. No. 1 Stuart, sec. 22-25-27. T.D. 3,410 ft.; P.B. to 3,398 ft.; testing.
Gulf Oil Corp. No. 1 Carson, sec. 28-21-37. Drlg. 3,636 ft.
Humble Oil & Ref. Co. No. 1 Greenwood, sec. 9-22-37. Cellar and pits.
Landreth Prod. Co. No. 2 Grizzell, sec. 5-22-37. Cellar and pits.
Harry Leonard No. 5 Lanehart, sec. 21-25-37. Drlg. 2,710 ft.
Magnolia Pet. Co. No. 3 Cary, sec. 21-22-37. Loc.
Repollo Oil Co. No. 1 Fowler, sec. 9-24-37. T.D. 3,030 ft.; cleaning out.

Eddy County

Etz Bros. No. 3 State, sec. 16-17-30. T.D. 3,552 ft.; to shoot.
Adams et al No. 1 Page, sec. 15-21-18. Wildcat; T.D. 100 ft.; S.D.O.
Republic Prod. Co. No. 7 Russell A, NW SE NW sec. 18-17-31. Drlg. 3,514 ft.
Republic Prod. Co. No. 3 Robinson Permit, C NE NE sec. 27-17-29. T.D. 2,798 ft.; C.O. after shot.
Barnsdall Oil Co. No. 5 Dodd, sec. 22-17-29. T.D. 2,757 ft.; C.O. after shot.
William Dooley No. 2 Hatchett, SW SW NE sec. 14-20-26. Drlg. 146 ft.
H. & W. Drlg. Co. No. 1 Forgarty, C SW SW sec. 14-23-29. Wildcat; drlg. 2,073 ft.
Flint Prod. Co. No. 1-B Flint, sec. 20-17-30. Drlg. 2,663 ft.
Murchison No. 1-B State, SE sec. 16-17-30. Drlg. 2,910 ft.
Carper Drlg. Co. No. 1 Gissler, NW sec. 23-17-30. Loc.
Continental Oil Co. No. 1 Barrett, NW sec. 22-20-30. T.D. 188 ft.; running csg.
Wesley McCallister No. 1 Cagle, C NW NW sec. 8-26-30. Loc.
Repollo Oil Co. No. 1-D Parke, sec. 15-17-30. Bldg. roads.
Flynn, Welch, Inc., No. 2 Stevens, sec. 13-17-30. Drlg. 1,400 ft.
Neil Wills et al No. 1 Stovall-Wood, sec. 20-20-30. T.D. 142 ft.; straightening hole.
Carlsbad Oil Co. No. 1 Pecos Irrigation, C NE SE sec. 15-25-28. R.U.M.
Barnsdall Oil Co. No. 6 Dodd, sec. 22-17-29. Drlg. 450 ft.

Roosevelt County

Clovis Corp. No. 2 Wilmes, C SE NE sec. 17-2s-30e. Drlg. 2,890 ft.
Dummit Oil Co. No. 1 Todd, SE SE sec. 34-3n-29. T.D. 280 ft.; waiting on csg.

Otero County

George Muldey No. 1 State, SW cor. sec. 11-25-8e. T.D. 263 ft.; S.D.
O. K. Hearte No. 1 Hattie Evans, NW NW SW sec. 22-24-12. O.W.D.D.; wildcat; T.D. 1,951 ft.; S.D.

Curry County

Bond & Harrison No. 1 Hart Ranch, C NW SE sec. 13-2n-31. Rigging up.

NORTHWEST NEW MEXICO

Bernalillo County

Norins Realty Co., Inc., No. 2 North Albuquerque, NE SE NW sec. 19-11n-4e. Drlg. 3,150 ft. gr. sh.

San Juan County

Anna Oil Corp. No. 6 Govt., SW NE NE sec. 33-30n-11w. Drlg. 210 ft.
Jack Amenda No. 4 Hart, NW NE SW sec. 25-30n-12w. Drlg. 1,785 ft.
Continental Oil Co. No. 59 Tribal, SE SW SE sec. 35-30n-19w. M.I. machine.

Socorro County

R. Allen Brown, Tr., No. 1 Belen Grant, SE NW sec. 16-2n-1e. Bldg. rig.

Valencia County

C. A. Grober et al No. 1 Fuqua, NE NE sec. 19-5n-3e. Drlg. 325 ft.; will run 12½-in.

COLORADO

Adams County

Glenridge Oil Co. No. 1 Hills, SE SE SE sec. 27-3s-64w. S.D. 4,345 ft.; parted pipe in hole.

Huerfano County

S. W. Pressey No. 1 Ojo, SW NE sec. 10-29s-69w. Drlg. 3,350 ft. after lowering 5⅞-in. to bottom to S.O. cavings caused by gas; Dakota expected 3,900 ft.

Larimer County

The Continental Oil Co. No. 8 Buckeye, C NE SW section 31-10n-68w, Wellington field, is temporarily abandoned at 4,368 feet after plugging back from 4,992 feet, where it tested the Sundance without results. It showed a small quantity of oil with water from the Muddy at 4,250-60 feet. Elevation is 5,444 feet. This well is close to the discovery which came in for 82,000,000 feet of gas a day in the Muddy in 1923. It was the first test to the Sundance north of a fault which bisects the structure. A test several years ago to the Sundance south of the fault was dry.

L. D. Charboneau et al No. 1 Thompson, C NE sec. 12-4n-70w. Drlg. 153 ft.

Lincoln County

Consolidated Smelting & Metals Corp. No. 1 Hancock, NE NE SW sec. 7-17s-52w. Drlg. 2,240 ft. in variegated sh. below Morrison; carrying 8¼-in.

Moffat County

The Mountain Fuel Supply Co. No. 1 Donnell, on the Powder Wash structure, is reaching a critical stage and was reported showing some gas this week while coring at 3,080 feet. It is half a mile to the northwest

LET "Babe" Ruth Boost your Sales

Sinclair dealer shakes hands with his star salesman—"Babe" Ruth

Wouldn't you like to have "Babe" Ruth sell for you . . . on the radio . . . on posters . . . in magazines . . . newspapers . . . movies? That's just what he is doing in the Sinclair-"Babe" Ruth Baseball Contest for every Sinclair distributor, jobber and dealer.

Every week motorists are flocking to Sinclair dealers' stations for free contest entry blanks. They're after the two Nash 8's and 520 other weekly prizes. And they give Sinclair dealers thousands of new sales opportunities. Let the "Babe" Ruth Baseball Contest build business for you this spring. Just phone the local Sinclair office or write to Sinclair Refining Company (Inc.), 630 Fifth Ave., New York City.

11,500 posters like this go up May 1st in the vicinity of Sinclair dealers' stations throughout the country. Other advertising includes "Babe" Ruth broadcasts twice each week over 61 CBS stations, newspapers and magazine ads.

"Babe" Ruth inspects one of the 20 RCA Victor Auto Radios which Sinclair is giving away every week in the Sinclair-"Babe" Ruth Contest. Other weekly prizes of 2 Nash 8's and 500 "Babe Ruth autographed" baseballs.

of No. 1 Stewart, which gauged 35 bbls. per hour at 3,087-3,113 feet after flowing into the pits for 15 hours. and a little more than a mile to the northwest of No. 1 Musser, which was completed in 1929 at 2,152 feet for 35,000,000 feet of gas. To the north of No. 1 Musser and east of No. 1 Stewart, is No. 1 Allen, which made 285 bbls. in six hours at 5,032 feet. All of these wells found production in the Wasatch of Tertiary age.

The Carter Oil Co. is reported to have taken an option on the Colorado Land & Livestock Co. property 12 miles east of the Dry Mountain structure where the Anderson-Kerr Drilling Co. is now drilling a test in its No. 1 Denise. The Texas Co. also is reported to have taken some acreage in this district. Across the Wyoming line extending eastward to Baggs the Mountain Fuel Supply Co., the Ohio Oil Co., the Continental Oil Co., and others are active. Numerous geologists are expected to be in the district as soon as weather conditions permit.

Mountain Fuel Supply Co. No. 1 Donnell, C SE NE sec. 31-12n-97w. Cg. 3,087 ft.; S.G.
Anderson-Kerr Drlg. Co. et al No. 1 Denise, C SE SE sec. 19-9n-99w. T.D. 1,350 ft.; sdtrkg. bailer; 12½-in. down past top of bailer.
Anderson-Kerr Drlg. Co. No. 1 Marrs, C SE NE sec. 17-11n-100w. Bldg. road.

Morgan County

Swisher et al No. 1 Lunt, SE cor. sec. 3-4n-60w. T.D. 1,718 ft.; cmtg. tbg. at 1,600 ft.; prep. to shooting.

Park County

The South Park Oil Co. No. 1 Lemar, on the South Hartsel dome, has passed through 350 feet of heavily saturated shale at present depth of 4,420 feet and around 180 bbls. of oil were bailed out of the hole in four days while drilling was in progress. The fluid level is about 300 feet and the quantity of oil in the shale makes the well appear to be commercial in that formation. This is a better showing than generally found in the Florence shale wells to the southeast which have produced more than 11,000,000 bbls. to date. The 8¼-inch is being carried close behind the drill with the Apache Creek sand as the next objective. It is planned after the 8¼-inch is cemented to perforate the pipe opposite the pay with the intention of producing from that horizon.

South Park Oil Co. No. 1 Lemar, NE NE SE sec. 34-11s-75. Drlg. 4,420 ft.; 8¼-in. at 4,390 ft.
South Park Oil Co. No. 1 State, SE NE SW sec. 16-11s-75w. S.D. 5,705 ft.

WYOMING

Albany County

The Mid-Continent Petroleum Corp., a newcomer in the Rocky Mountain area, has placed on record at Laramie leases on 1,045 acres in the Rose Rice tract in sections 28 and 32-13n-75w, and 7,380 acres in the D. V. Rice Toothaker tract in sections 24-12n-75w and 22, 25, 26, 27, 28, 33 and 35-13n-75w. The block is west of the Amerada deep test in Laramie County and south of the several wildcats drilled by the Ohio Oil Co. in the Big Hollow district. It lies immediately north of the Colorado line.

Hal Blakeman No. 1 Chapple, C NE NW sec. 33-21n-76w. C.O. to bottom at 1,681 ft.
Murphy Oil Co. No. 1 Holst-Woolf, NW NW NW sec. 19-17n-76w. Drlg. below 2,800 ft.
Murphy Oil Co. No. 3 Wilson, SW NW SW sec. 18-17n-76w. Drlg. below 3,320 ft.

Big Horn County

Ohio Oil Co. No. 1 Baker-Byron, SE NW sec. 23-56n-97w. Drlg. in r.b. 5,110 ft.
Ohio Oil Co. No. 1 State, NE cor. Lot 38, sec. 36-56n-97. Drlg. 5,450 ft. in Tensleep; tstd. 8 B.P.D. at 5,437 ft.
Woods-Callahan Oil Co., Ltd., and Wyoming O. & R. Co. No. 1 Evans, NE NE NW sec. 12-44n-91w. M.I. rot. rig from California.

Campbell County

G. J. Sherin et al No. 1 Rodes, NE SE SW sec. 24-49n-74w. Drlg. 410 ft.

Carbon County

The General Petroleum Corp. has reassigned to Earl W. Reeder, Inc., No. 1 Union Pacific, C SW SW section 19-20n-83w, which has been standing at 5,931 feet for some time. Operator is running 4-inch to test the Muddy at 4,777-4,802 feet. Operation is on the Overland dome.

Ohio Oil Co. No. 6 Diamond Cattle, NW NW sec. 35-20n-78w. Drlg. 3,095 ft.
Medicine Bow Oil Co. No. 1 Hintze-Govt., C NE SE sec. 18-22n-78w. Drlg. 2,130 ft. in Sundance; slow progress due to heavy mud carried to hold back gas pressure.
Ohio Oil Co.-California Co. No. 2 Kyle, C SE SE sec. 26-21n-79w. Drlg. 4,668 ft.
Ohio Oil Co.-California Co. No. 4 Union Pacific, C SW SW sec. 25-21n-79w. Drlg. 3,937 ft.
Ohio Oil Co.-Medicine Bow Oil Co. No. 1 U. P.-Wister, C NW SW sec. 17-22n-78w. Rig.

Converse County

Chadron-Osage Oil Co. No. 1 State, SW cor. sec. 16-32n-69w. Drlg. 3,200 ft.; slight S.G.
Wyoming Southern Oil Co. No. 2 Salisbury, NE NW SE sec. 27-32n-69w. Drlg. 269 ft.
Wyoming Southern Oil Co. No. 1 Evert, NW NW SW sec. 26-32n-69w. M.I.M.; contr. to W. P. Holman for 1,000-ft. hole if necessary.

Fremont County

Ben Stewart No. 1 Darnell, NE SE sec. 26-3n-1w. M.I.M. test to Frontier at 600 ft.; 1½ mi. E of Pilot Butte wells; (first report).

Lincoln County

H. M. Eller et al No. 4 Govt., SE NW SW sec. 32-19n-116w. T.D. 401 ft.; will tst. S.O. in lenticular sd. at 397-401 ft.
Place Oil Co. No. 1 Davis, SE SE SE sec. 9-26n-113w. Res.; landed 10-in. at 780 ft.; drlg. ahead.

Natrona County

Empire State Oil Co. No. 3-U, SE NE sec. 33-34n-83w. Drlg. red sh. 2,490 ft.
Wyalta Oil Co. No. 4 Govt., NW NW sec. 5-29n-81w. Cmtd. 6⅝-in. on top of Sundance at 1,082 ft.; rng. 2-in. tbg. to test at 1,030-72 ft.
Wyalta Oil Co. No. 5 Govt., SW SW sec. 30-30n-81w. Drlg. 600 ft.

Niobrara County

Ohio Oil Co. No. 1 Leo 17, NW NW SE sec. 35-36n-65w. Rng. dk.
Ohio Oil Co. No. 6 Putnam, C NW NW sec. 4-35n-65w. T.D. 4,065 ft.; tstg.; base Sundance 4,060 ft.
Ohio Oil Co. No. 8 Putnam, SW SE SW sec. 33-36n-65w. Drlg. 4,025 ft.; to first Sundance 3,835 ft.
MacKinnie Oil & Drlg. Co. No. 2 Thompson, NW NW NE sec. 7-35n-65w. Rig: W.O. equipment.
J. M. Huber Corp. No. 1 Lamb, SE SE SW sec. 27-36n-65w. T.D. 3,897 ft.; fsg. D.P.
Riggs Oil Co. No. 2 Spaugh, SE SE SW sec. 32-34n-65w. Drlg. 1,430 ft. in Minnelusa.
Ohio Oil Co. No. 5 Leo, NW NW SW sec. 35-36n-65w. Drlg. below 4,407 ft.; depth not reported.

Park County

General Pet. Corp. No. 1 Govt., NW NW NW sec. 33-47-100. Cg. 5,850 ft.; sat. Embar close-grained and will not release pressure.

Platte County

Dividend O. & R. Co., Inc., No. 1, CSL NW SW sec. 17-24n-66. S.D. 2,385 ft.; C.D.

Uinta County

E. A. Ottman et al No. 1 Govt., C SE NW sec. 26-14n-

Facts BY SHARPLES *on treating pressure distillate*

SHARPLES CENTRIFUGAL ACID TREATING ASSURES:

Higher yield of finished end point gasoline.
Higher anti-knock rating of finished gasoline.
Greatly reduced neutralization costs.
Reduction in re-run still corrosion.
Elimination of any necessity of re-running under vacuum.

In the process, distillate and acid are automatically accurately proportioned, mechanically mixed and centrifugally separated after a reaction period of controlled duration.

That's the story in a nut-shell.

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Washakie County

Arlton & Doyle No. 1 Govt., SW SW SE sec. 29-48n-91w. T.D. 1,356 ft.; prep. to resume.
Yale Oil Corp. No. 2 Govt., CEL SE SE sec. 25-48n-91w. Loc.; (first report).
Bruce Teeter No. 5 Govt., CSL SW SW sec. 30-48n-90w. Drlg. 100 ft.; 10-in. at 85 ft.; (first report).
Christensen & Thorne No. 3-X Govt., NW SW SW sec. 31-48n-90w. Drlg. sh. 860 ft.
Wyoming O. & R. Co. No. 8 Govt., NW NE NW sec. 31-48n-90w. Drlg. 200 ft.; 10-in. at 79 ft.; (first report).
Wyoming O. & R. Co. No. 7 Govt., SW NW NW sec. 30-48n-90w. Drlg. bl. sh. 710 ft.; 10-in. at 87 ft.; (first report).

Weston County

Osage field production in March was 27,282 bbls., and refineries took 39,500 bbls. from production and storage. The daily average production is higher at present than at any time in the past three years. This increase is credited entirely to the electric heating of wells which is proving very successful.

Two wells were completed for 1 bbl. each per day. These were Charles Stough No. 7, near C SW NW section 4-46n-63w, from shale and sand at 300 feet, total depth, and Henry Egert No. 4, CWL NE SW section 7-46n-63w, from sand at 336-55 feet.

R. L. Rose No. 7, C SW SE sec. 8-46n-63w. Drlg. below 200 ft.

MONTANA

Big Horn County

Daniels Pet. Co. No. 1 May, C SE SE sec. 13-1s-33e. T.D. 3,830 ft.; installing pmp. to exhaust wtr. and test oil show in Tensleep.

Fallon County

The Montana-Dakota Utilities Co. No. 3 Smith No. 1 Unit 8, C SE NW section 8-4n-62e, 3,000 feet north of the discovery well, was plugged back from 6,811 feet, total depth, to showing at 6,750-75 feet and is testing. It is making from 100 to 300 bbls. of fluid per day, mostly water, and is showing up about the same as the discovery at this level.

Glacier County

The secretary of the interior has before him for consideration a petition from the Blackfeet Indian council for an order authorizing the sale at auction of oil and gas leases on approximately 9,200 acres on the southwestern side of the Cut Bank area. It is proposed to offer the leases in tracts of from 40 to 160 acres with a requirement for one well to each tract this year. Some of the operators have protested the sale on the ground that it will work a hardship on the producers by further restricting a market for the Cut Bank crude and impose heavy capital outlays on the industry for wells not needed to take care of the normal market.

If the sale should be authorized with the drilling provisions attached, it is estimated that around 243 wells will have to be drilled this year to take care of the requirements on this land and on leases already owned. While some dry holes probably would be drilled in the new territory, the new production which would be brought in would far exceed the normal decline of the field and further complicate the market situation. Cut Bank crude has in the past found its best market in Canada, but with the development of the Turner Valley field that market for Montana crude is steadily diminishing as production increases across the line. To increase Cut Bank production at this time would mean an output in excess of market requirements and could lead only to a break in the price structure or the proration of the field. With wells cut to 10 to 12 bbls. per day each, the small operators would face a serious curtailment of their resources for carrying on drilling operations for which they are already obligated.

Hugh A. Stewart, manager of the producing department of the Texas Co. for the Rocky Mountain area, expressed the belief that some way out of the present dilemma will be found.

There were no completions in Cut Bank this week and only one new operation.

Montana Headlight Oil Co. No. 4 Britton, NE SW NE sec. 14-34n-6w. Spdg. 90 ft.
Cut Bank Oil Trust No. 1 Yunck, SE SE SE sec. 23-34n-6w. R.U.
Glacier Prod. Co. No. 2 Fuller, C NW SE sec. 17-33n-5w. Drlg. 470 ft.
Glacier Prod. Co. No. 2 Connolly, C SW SW sec. 6-33n-5w. Drlg. 775 ft.; Colo. 530 ft.; 10¾-in. 535 ft.
Glacier Prod. Co. No. 1 Corrigeau, NW NW NW sec. 21-33n-5w. Drlg. 1,060 ft.; Colo. 583 ft.; 10¾-in. 596 ft.
C. E. Walgren No. 2 Britton, C SE NE sec. 14-34n-6w. Cmtd. 10¾-in. at 520 ft.
Texas Co. No. 1 Stufft, C NW NW Lot 4, sec. 1-35n-6w. Cmtd. 7-in. at 2,945 ft.; M.I. spudder.
Santa Rita O. & G. Co. No. 1 Madison, CWL NW SW sec. 30-34n-5w. Drlg. 1,960 ft.
Wm. Hanlon, Agt., No. 2 All.-128, C NW SE sec. 12-32n-6w. Drlg. 2,610 ft.
Dakota-Montana Oil Co. No. 1 Tribal-136, C NE NE sec. 15-34n-6w. Drlg. 2,340 ft.
Wm. Hanlon, Agt., No. 2 All.-131, C Lot 9, SW NW sec. 7-32-5w. Drlg. 2,700 ft.
Dr. Peter Potter No. 2 All.-125, NW NE NE sec. 12-32n-6w. Drlg. 2,685 ft.

Judith Basin County

Fletcher E. Hunt No. 3, NW SE NE sec. 30-14n-15e. Drlg. 1,345 ft.

Liberty County

The Western Natural Gas Co. No. 2 Wallace, NW NW SW section 15-37n-4e, Whitlash gas pool, was completed at 2,000 feet for 5,000,000 feet open flow. It is an inside location.

Park County

Ben W. Ryan et al No. 1 Burgess, SE SW NW sec. 28-2s-11e. T.D. 606 ft.; prep. to resume.

Pondera County

Gordon Campbell No. 1 Hughes, NW NE NW sec. 12-30n-4w. T.D. 2,494 ft.; tools rec. and S.D.
Clinch Pet., Ltd., No. 1 Hollam, NW NW NW sec. 12-28n-6w. T.D. 2,200 ft.; resumed.

Phillips County

City of Malta No. 1 Govt., C SE SE sec. 18-30n-30e. T.D. 1,120 ft.; resuming; will run 6¼-in.
R. G. Parrent No. 1 Hartman, C NW SE sec. 12-24n-25e. Drlg. 898 ft.

Yellowstone County

Broadview Dome Oil Co. No. 1, NE NE SW sec. 18-3n-23e. Unloading tools.
R. C. Tarrant No. 2 Sayre, NE NE SW sec. 26-3s-24e. M.I.M.

Toole County

Big West Oil Co. No. 6 Dahlquist, CEL SW NE sec. 21-35n-3w. Drlg. 1,600 ft.
Shaver Oil Co. No. 2 Shaver, SE SW NE sec. 11-34n-2w. Loc.
Shaver Oil Co. No. 3 Shaver, CSL SW NE sec. 11-34n-2w. Loc.
Pfabe & Engleking No. 11 Seabrook, CSL SE SE sec. 19-35n-2w. Drlg. 1,500 ft.
A. E. Crumley No. 9 Fryberger, CEL NW SE sec. 24-35n-3w. Drlg. 700 ft.
Kevin-Butte Synd. No. 1 Thompson, NW NE NW sec. 33-35n-3w. T.D. 1,100 ft.; resuming.
W. S. Knight No. 1 Gunderson, SW SE NW sec. 9-35n-2w. Drlg. 1,000 ft.
A. E. Crumley No. 11-A Shaw, SE NW NE sec. 35-36n-2w. Drlg. 550 ft.

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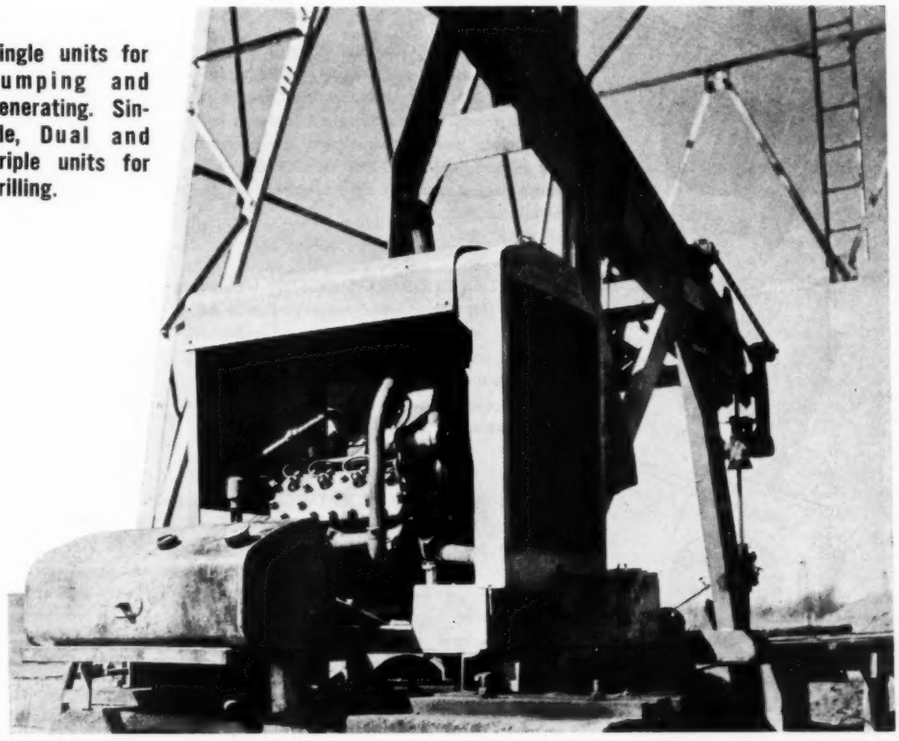

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A. Beardslee No. 5 Swears, CSL SE NW sec. 9-35n-2w. T.D. 1,610 ft.; fshg.
Bryant Bros. No. 1 Lashbaugh, NE SW NW sec. 34-25n-2w. T.D. 850 ft.; R.U. heavier machine to resume.

UTAH

Emery County

Standard Oil Co. of California and Continental Oil Co. No. 1-A Palm, C NW NW sec. 27-23s-11e. T.D. 1,652 ft.; prep. to resume.

Grand County

Utah Southern Oil Co. No. 1 Hyde, SE NW NW sec. 33-22s-22e. S.D. 6,715 ft. for heavier equip.
Columbia Crude Corp. No. 1 Rath, NW SW SE sec. 12-25s-20e. T.D. 2,045 ft.; cmtd. 7-in. at 2,143 ft.; drlg. plug.

NEBRASKA

Sioux County

J. M. Huber Corp. and United Producers, Inc., No. 1 Morgan, C SW SW sec. 32-35n-56w. Drlg. 2,692 ft. (C.D.), hd. gr. sh.; top Fuson 2,585 ft.; top Lakota 2,655 ft.; no shows.

Dawes County

Stephens Oil Corp. No. 1 Palmer, C NW SW sec. 1-33n-50w. Drlg. 1,880 ft.

Lincoln County

Smith & Wright No. 1 Hansen, C SW NW sec. 24-15n-31w. Drlg. below 1,278 ft.; did not test shows at 1,200 ft.

Kansas Fields

(Continued from Page 78)

15w, location; Lario Oil & Gas Co. No. 1 Waudby, SE SE NE section 26-14-15w, location.

Chautauqua County

Sinclair Prairie Oil Co. No. 35 Casement, SW SW SE section 32-33-11, Chautauqua County, had lime at 1,686-1,774 feet, total depth; flowed 120 bbls. of oil, with 3,500,000 feet of gas, in 17 hours, and on completion test flowed 88 bbls. of oil, with 3,370,000 feet of gas.

Sagamore Oil Co. No. 4 White, C SE NW section 15-32-12, an old Chautauqua County well, was deepened from 740 feet to Oswego lime at 1,266-78 feet, total depth; produced 685,000 feet of gas and was recompleted.

The following new work in Chautauqua County was reported: J. B. Reagan No. 1 Severns, NW cor. section 16-34-12, drilling at 90 feet; Sinclair Prairie Oil Co. No. 1 Kirschner, SE SE SW section 32-33-11, location; Denman Brothers No. 2 French, SW SW NE section 1-33-12, drilling at 1,525 feet; Sagamore Oil & Gas Co. No. 11-A Willson, NE SW NE section 14-33-12, location; George Slefkin and Republic Natural Gas Co. No. 1-A Burton, C N half S half SW section 27-33-12, drilling at 340 feet; Griffin & Bell No. 8 Oliver, C S half SE SW section 1-32-10, an old well being deepened, drilling at 2,155 feet; Sagamore Oil & Gas Co. No. 2 Kingston, SW SW SE section 8-32-11, moving in machine; Morris Gold and others No. 1 Payne, SE NE NW section 32-33-13, was drilling at 1,030 feet.

Marion County

National Refining Co. No. 19 Reamey, SE SW SE section 17-21-4, Covert-Sellars pool, Marion County, topped Viola lime at 2,407 feet; total depth, 2,409 feet; and pumped 103 bbls. of oil in 18 hours, completed.

Barber County

Barbara Oil Co. No. 1 Holmes, C E half SE section 15-33-13w, wildcat in the Medicine Lodge area, Barber County, topped Viola lime at 4,845 feet; total depth, 4,847 feet, and made potential of 441 bbls. of oil through casing. Gas was estimated at 2,000,000 feet. This is the first oil well to be completed in the old Medicine Lodge gas field, southwest of Medicine Lodge.

Two new tests in Barber County were reported. Barbara Oil Co. No. 2 Root, C E half NE section 15-33-13w, Medicine Lodge area, was a location. Pryor & Lockhart No. 1 Gant, C SE section 7-31-13w, wildcat, was moving in material.

Pratt County

H. V. Elwell and others No. 1 Fay, NW NW SE section 15-27-14w, wildcat in Pratt County, topped anhydrite at 910 feet; Kansas City lime, 3,295 feet; had a fishing job, and was abandoned at 4,355 feet, total depth.

Harvey County

Harburney Oil Co. No. 1 Schrag, NW NW SE section 24-22-3w, an old Harvey County wildcat, was deepened from 587 feet to 3,711 feet, and was dry and abandoned.

Finney County

Keith & Olson Drilling Co. No. 1 Ely, NW NW SW section 34-22-29w, Finney County wildcat, topped Topeka lime at 3,460 feet; Mississippi, 4,655 feet; Viola, 5,315 feet; Simpson, 5,460 feet; had Siliceous lime at 5,470-5,556 feet, and was dry and abandoned.

Ellsworth County

Continental Oil Co. and others No. 2 Rolfs, SE SE NW section 34-17-8w, an old well in the Edwards pool, Ellsworth County, was deepened from 3,240 feet to 3,250 feet, total depth, failed to increase production, and was recompleted.

Carter Oil Co. and others No. 4 Groth, SW cor. section 23-17-9w, Lorraine field, Ellsworth County, was rigging up rotary.

Miscellaneous First Reports

Miller & Morton and others had dug cellar for No. 1 Meade, SE SE NW section 33-25-16w, wildcat in Edwards County.

Two new operations were reported in Scott County, including Olson Drilling Co. and others No. 1 Nolan, NW NW NE section 13-19-33w, wildcat, moving in material. Atlantic Refining Co. No. 1 Mark B, C NE SE section 15-20-33w, Shallow Water area, location.

Ohio Oil Co. No. 1 Dirks, NE cor. section 25-18-16w, was location for a new test in the Otis area, Rush County.

New work in McPherson County: Continental Oil Co. and others No. 4 Hetzke A, SW SW SE section 20-21-1w, building rig; same operators' No. 2 Kindblade, SE NE SW section 20-21-1w, building rig; Continental Oil Co. No. 4 Blair, SE SW SW section 21-21-1w, building rig; same operator's No. 2 Boechner A, C W half W half NW section 28-21-1w, cellar; Lauck & Moncrief No. 1 Krehbiel, SE SE SW section 27-21-2w, wildcat, rigging up rotary; E. B. Shawver No. 1 Fletcher C, SW SE SW section 16-19-1w, an old well, rigging up to deepen; H. & M. Drilling Co. No. 3 Sellers, SE SW NE section 31-19-1w, ponds.

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West and North Texas

By
L. E. BREDBERG

HIGH GRAVITY OIL WELL IN DEEP ELLENBERGER HORIZON

FORT WORTH, Tex., Apr. 19.—Exceptionally important news of the week in the West Texas district was the Ellenberger strike of the Gulf Oil Corp. in its No. 4 W. N. Waddell and others, located in section 4, Block B-27, P.S.L. Survey, in the Sand Hills field in western Crane County. This well tested as high as 283 bbls. in three hours. In another part of this edition a more extended account of the strike will be found together with a map of the area.

There are 19 wells in the Sand Hills field producing from the Permian lime, but since the discovery of this new high-gravity oil horizon it will be sought in preference to the Permian with its lower gravity, sulfur-impregnated oil. It is expected that the Gulf Oil Corp. will carry its No. 3 Waddell, now drilling in the SW cor. of section 21, Block B-21, down to the deeper pay unless a prolific Simpson sand producer is struck above the Ellenberger pay.

Gas in Northern Gaines

A wildcat drilling near the Yoakum County line in northwestern Gaines County demanded attention when it struck heavy gas while drilling between 2,980-3,002 feet, and heavy mud had to be resorted to to prevent a blowout in drilling to 3,092 feet, where it was shut down to kill the gas.

This well, Amon G. Carter and Continental Oil Co. No. 1 A. L. Wasson, in section 48, Block AC, P.S.L. Survey, has contract depth of 5,200 feet, but due to its logging higher structurally than a dry hole drilled about 4 miles to the southeast, and encountering this high volume, operators think it may have opened another producing area for this county.

Hockley Find Acidized

The Hockley County discovery of the Texas Co., No. 1 Slaughter, in Labour 83, League 38, Zavalla County School Lands, in the southwestern corner of the county, which drilled to 5,030 feet and had to be plugged back because of water, was acidized this week with 2,000 gallons at plugged back depth of 5,023 feet. It flowed 36 bbls. per hour after treatment. It had flowed 114 bbls. in one hour at a total depth of 5,025 feet when opened after a three-day shut-in.

This discovery well will result in other immediate tests, McElreath & Suggett of Fort Worth contracting to drill a test on a block of 1,050 acres to the east of the Texas Co. block, and on the same ranch. Another test for the county is scheduled for the northern part, far removed from this new strike. R. F. Duggan and others are to sink this test, a 5,500-foot hole, on a block of 10,000 acres out of the Yellow House Land Co.'s ranch. Location is near the center of Labour 11, League 718, Capitol Syndicate Lands.

Another Gaines Wildcat

The Wentz Oil Co. is erecting derrick for a wildcat on the Dalmont ranch, in section 5, Block A-22, 2 miles southwest of a small discovery of the Landreth Oil Co., the first producer in the county. This will be an important test due to the fact that the area has been defined to the north and northeast and also 2 miles to the south, and therefore has to go east or to the southwest if it is to expand into a field of any consequence.

Wildcat in Pecos

W. Y. Penn is staking location for a wildcat test in section 85, Block 8, H.&G.N. Survey, on the Tipton lands, and about 4½ miles southeast of the Nettervile pool in the northern part of Pecos County. It is also about 6 miles east and a little north of the Pecos Valley pool.

Loving County Activity

The Mason area in northwestern Loving County is to receive two more tests immediately, which will help to prove whether or not a field of importance is located on and around the Kyle ranch, on which the discovery was made about six weeks ago. The Barnett Petroleum Co. is to drill on the W. D. Johnson lands, in the northeast quarter of section 12, Block 56, Township 1, T.&P. Survey, 2 miles northwest of the discovery, the first test in that direction. The other test is to be started by the Woodley Petroleum Co. one-half mile east by south of the discovery, in section 21, Block 55, Township 1.

With two tests drilling in the field, one ready to start, and the above two preparing to get under way, the field will soon either be extended or partly defined. Pasotex Pipe Line Co., subsidiary of Standard Oil Co. of California, is taking the oil from the pool for its associate company refinery at El Paso.

Crockett Test

Harry A. Ringle is planning on drilling a 1,600-foot test on the A. C. Hoover lands, in section 14, Block 1, G.C.&S.F. Survey, in wildcat territory in Crockett County, and K. E. Sherman and others have spudded their test on the W. E. Friend lands, in the William Allen Survey, in section 3, about 2,000 feet southwest of a small well brought in by the Dobbs Oil Co. of Dallas a couple of years ago in Reagan County. The Sun Oil Co. drilled a dry hole to the north of this small discovery.

Ward Wildcat

Culbertson & Irwin of Midland have staked location for a wildcat test on the John Sealey lands in the eastern part of Ward County. Same falls in section 96, Block A, G.M.M.B.&A. Survey, and will seek production from the lime found in the Shipley pool in the southern part of the county. The test will be drilled to 3,200 feet.

New Jones Pool

Fain-McGaha, Inc., of Wichita Falls, have apparently uncovered another field in Jones County. Their No. 1 Lewis, located in section 37, Block 15, T.&P. Survey, topped a sand at 1,928-35 feet and is now preparing to test, appearing as good for at least 25 bbls. per day. It is located 5½ miles northeast of the town of Hawley.

Two more wildcats are slated for Taylor County. W. W. Fondren of Houston has staked location in section 72, Block 14, T.&P. Survey, and Sanger Petroleum Interests, Inc., have a location on the J. E. Dyer lands 2 miles east of Abilene, in section 39, B.A.L. Survey. These will make seven tests drilling or preparing to drill in the county, the largest number ever underway in the area at one time.

Ungren & Frazier have staked location for a wildcat 3 miles northeast of the Hawley pool in Jones County and M. R. Meade and others have derrick up for a wildcat 7 miles west of Luebers, in the same county. The former is located in section 12, Block 15, T.&P. Survey, and the latter in section 4, O. A. Lands. A glimpse at the wildcat drilling report on Jones County will show it to be one of the most active areas in West Texas from a wildcatting standpoint. More wildcats have been drilled in the county within the past year and a half than in any other West Texas county.

Art Cox has staked location for a deep test about 8½ miles northeast of Merkel in Jones County on the lands of M. E. West, in section 72, League 126, DeWitt County School Lands Survey.

WEST CENTRAL AND NORTH TEXAS

The Ellenberger wildcat test of Ungren & Frazier, about 4 miles west of Moran in southern Shackelford County, located in section 26, L.A.L. Survey, showed approximately 800,000 feet of gas this week when drill-stem test was made from 3,982-4,000 feet. The test is seeking production from the Ellenberger lime and is scheduled to go to 4,200 feet.

Two tests in North Texas which are engaging attention are those of the Davis Oil Corp. on the Waggoner ranch in Wilbarger County and the Montague County test of Montague Oil Co., Inc., on the W. J. Bell farm. The former is located about 3 miles west of the recent Landreth lime deep producer in the Waggoner pasture, and is in section 36, Block 2, H.&T.C. Survey. It is an old producer being deepened and is showing for an oil well and also a 3-mile western extension for the deep pay. It is now testing and will probably be completed next week.

The Montague Oil Co.'s well in section 2,882, T.E.&L. Survey, and is now testing after running 8-inch pipe to 3,904 feet. It showed oil and gas when bailed down 2,200 feet.

Young County

S. S. Alexander of Fort Worth has opened a shallow pool in the north central part of Young County in his No. 1 Mrs. K. D. Clark, in section 209, about 2½ miles southeast of Olney, and about 1¾ miles northeast of a shallow pool opened eight years ago in the same sand. It logged the pay at 845-52 feet and pumped 32 bbls. of oil in nine hours after plugging back to 851 feet.

C. V. Welch and others have opened a pool between the Vick-Graham and South Bend fields in southern Young County in their No. 1 A. B. Street, in the Mary E. Criswell Survey. The well was acidized at 3,380-3,460 feet. It made a head over the derrick following the treatment. Potential test will be made and the test completed.

Bolivar Pool

In the recently opened Bolivar pool west of the town of that name in western Denton County, Bolivar Drilling Co. No. 1 B. R. Bentley, in the Y. Youcham Survey, about one-half mile southeast of a recent gas discovery, now depleted and temporarily abandoned, and about 2 miles southeast of the Lander discovery on the Forrester lands, is drilling in search of gas around 1,953 feet after missing the Lander pay. It had a showing of oil in the sand at 1,722-31 feet.

The Harry Culver No. 1 C. Waide, about 1½ miles northeast of the Lander discovery, set casing on sand at 1,751-58 feet, where it had a showing of oil. It is in the J. Chisum Survey, in the same county.

Denton Discovery

The Denton County discovery of A. A. Lander, Inc., on the E. W. Forrester lands, in the Barrough Survey, about 3 miles west of Bolivar in the western part of the county, pumped 80 bbls. of 40 gravity oil in 20½ hours, making a better well than many anticipated. It is producing from a sandy lime logged at 1,647-51 feet. The same operators has staked location for another test about 2,000 feet northwest of the discovery, and on the Gibson Brothers farm in the O. Wilcox Survey. Production from the new well has been sold to the Gainesville Refining Co.

Two locations have been staked near the Lander discovery and another about 5 miles southeast of it, and a fourth well will be drilled about 2 miles south of it.

There is much leasing activity taking place in this part of Denton County, extending over into Cooke County, and a number of other tests are being planned for the area, with a couple about to get under way.

PANHANDLE DISTRICT

The Shamrock Oil & Gas Corp. has just completed purchase of 12,800 acres of leases on the J. T. Sneed, Jr., ranch in the eastern part of Moore County and in the heavy gas-producing area of the Panhandle district. The company has contracted to drill a minimum of 18 wells and a maximum of 22, seven of which are to be drilled this year. The gas will be sold to the Panhandle Eastern

Pipe Line Co. Four wells have already been started under the contract.

Collingsworth Test

S. M. Castleberry and others, of Childress, have staked location for a wildcat on the J. H. Grogan lands, in section 100, Block 22, I.&G.N. Survey, in the northern part of Collingsworth County, and near a large block held by the Magnolia Petroleum Co. Walter Edwards of Shamrock has contract to drill the test, which is expected to spud by June 1. Location is about 5 miles south of the gas-producing area in Wheeler County.

WEST TEXAS COMPLETIONS

Crane County

Bert Fields No. 4 Gibbs, 2,229-57 feet, 783 bbls. on pump, acidized. Gulf Oil Corp. No. 5 Tubbs, 4,296-4,420 feet, acidized, 2,185 bbls. H. & P. Oil Co. No. 1 Hughes, 2,085-2,118 feet, acidized, 584 bbls. R. H. Henderson and others No. 1 Edwards, dry and abandoned 3,654 feet. B. C. Mann No. 5 Durham, 2,462-2,520 feet, shot and acidized, 50 bbls. on pump. J. M. Rush No. 3 Gibbs-Hughes, 2,258-80 feet, acidized, 575 bbls. on pump. E. B. Sines and others No. 1 Hughes, 2,450-2,500 feet, shot and acidized, 12 bbls.

Fisher County

General Crude Oil Co. No. 11 Flannigan, 3,110-14 feet, acidized, 70 bbls. on pump.

Ector County

Atlantic Refining Co. No. 2 Cowden, 4,165-4,260 feet, shot and acidized, 1,323 bbls.; No. 1-C Cummins, 4,150-4,240 feet, acidized, 617 bbls. Empire Oil & Refining Co. No. 2-C Cummins, 4,190-4,250 feet, acidized, 628 bbls.; No. 2-D Cummins, 4,185-4,250 feet, acidized and shot, 121 bbls. Landreth Oil Co. No. 2-B Scharbauer, 4,163-4,221 feet, acidized, 921 bbls.; No. 2-D Scharbauer, 4,170-4,225 feet, acidized, 1,396 bbls. Phillips and Pure Oil Co. No. 9 Cowden, 4,135-52 feet, acidized, 344 bbls. Skelly and others No. 6 Scharbauer, 3,525-3,622 feet, shot, 362 bbls. Stanolind Oil & Gas Co. No. 40 Cowden, 4,196-4,227 feet, shot, 449 bbls.

Howard County

O. M. Murray No. 6-A Davis, 2,560-2,862 feet, shot, 717 bbls. Sinclair Prairie Oil Co. No. 49 Dodge, 2,515-2,770 feet, shot, 510 bbls.

Pecos County

D. J. Finley and others No. 1 Iowa Realty Co., 1,610-34 feet, shot, 47 bbls.

Upton County

Brown-Hancock Oil Co. No. 1-A Baker, 2,282-2,360 feet, acidized, 835 bbls. on pump. J. W. Ellis No. 10-B Robbins, 2,138-75 feet, acidized, 907 bbls. Magnolia Petroleum Co. No. 6 Hughes, 2,232 feet, plugged back to 2,230 feet, top of pay 2,212 feet, acidized, 186 bbls. J. W. Perry No. 4 Sherk, 2,200-2,323 feet, 232 bbls. on pump. Shell Petroleum Corp. No. 36 Bowen, 2,143-58 feet, acidized, 521 bbls. on pump. Stanolind Oil & Gas Co. No. 44 Burleson, 2,069-2,107 feet, acidized, 92 bbls. on pump, 15 per cent water.

Ward County

Amerada Petroleum Corp. No. 1 McDonald, 2,288-2,454 feet, 619 bbls. after shot. Gulf Oil Corp. No. 18 Estes, 2,500-2,660 feet, shot, 1,811 bbls.; No. 19 Estes, 2,475-2,600 feet, shot, 480 bbls. Pat Hill No. 14 Clements, 2,258-2,331 feet, shot, 277 bbls. Humble Oil & Refining Co. No. 13-F University, 2,450-2,750 feet, shot, 1,297 bbls. C. F. Kolp No. 3 York, 2,286-2,547 feet, 65 bbls. Pat Moran and others No. 1 Reynolds, dry and abandoned 850 feet. Peck and others No. 3 Monroe, 2,285-2,330 feet, shot, 25 bbls. Prince Brothers No. 2-C Hall-Roberts, 2,338-2,532 feet, 200 bbls. Rio Bravo Oil Co. No. 20 Alcott, 2,280-2,490 feet, shot, 298 bbls. Sinclair Prairie Oil Co. No. 4-A Carnagie, dry and abandoned 2,343 feet. Skelly Oil Co. No. 6 Hathaway, 2,460-2,582 feet, shot, 6,634 bbls. Tide Water Associated No. 16 Johnson, 2,487-2,628 feet, shot, 821 bbls.

Winkler County

Atlantic Refining Co. No. 5 Lovett, 2,750-3,150 feet, shot, 786 bbls. Eastland Oil Co. No. 3-B Clapp, 2,778-3,100 feet, shot, 2,583 bbls.; No. 3-A Hailey, 2,725-84 feet, 1,724 bbls. Falcon Oil Co. No. 1-A McCutcheon, 3,350-3,550 feet, shot, 240 bbls. Bert Fields and others No. 5 Pure-Clapp, 2,811-3,092 feet, shot, 2,083 bbls. Gulf Oil Corp. No. 22 Daugherty, 2,896-3,000 feet, shot, 552 bbls.; No. 26 Daugherty, 2,830-3,126 feet, shot, 626 bbls.; No. 27 Daugherty, 2,836-3,020 feet, shot, 314 bbls.; No. 29 Daugherty, 2,830-3,020 feet, shot, 859 bbls.; No. 30 Daugherty, 2,830-3,020 feet, shot, 1,035 bbls.; No. 31 Daugherty, 2,825-3,020 feet, shot, 835 bbls.; No. 16 Keystone, 3,350-3,540 feet, 603 bbls. Humble Oil & Refining Co. No. 9-C Colby, 2,813-3,100 feet, acidized and shot, 403 bbls. Illinois Oil Co. No. 12-B Central State Bank of Abilene, 2,810-3,133 feet, shot, 911 bbls. Magnolia Petroleum Co. No. 68 Walton, 2,845-2,965 feet, shot, 822 bbls.; No. 69 Walton, 2,840-2,971 feet, shot, 746 bbls. J. C. Maxwell No. 1-B Gartex, 2,825-3,126 feet, shot, 881 bbls. Monday Oil Co. No. 15 Central State Bank of Abilene, 2,766-3,128 feet, shot, 1,187 bbls. Navarro Oil Co. No. 5 Drane, Tr., 2,740-3,130 feet, shot, 715 bbls. Shell Petroleum Corp. No. 6-L Hendricks, 2,780-3,099 feet, shot, 1,142 bbls.; No. 3-M Hendricks, 2,790-3,096 feet, shot, 633 bbls. Skelly Oil Co. No. 5 Colby, 2,850-3,100 feet.

NORTH TEXAS COMPLETIONS

Archer County

Anagos and others No. 11 J. S. Bridwell, 872-92 feet, 14 bbls. T. H. Brown No. 1 W. Ford, 1,102 feet, dry. L. T. Burns No. 2 Claude Cowan A, 1,112 feet, dry; No. 4 W. D. Pace, 1,267-78 feet, 10 bbls.; No. 5 W. D. Pace, 1,260-75 feet, 12 bbls.; No. 1 L. H. Tarr, 1,187 feet, dry. Consolidated Oil Co. No. 17 W. H. Portwood C-D, 1,442-54 feet, 75 bbls. Clint Crosby No. 1 Mary A. Garvey, 1,164 feet, dry. Deep Oil Development Co. No. 3 Wilson, 2,205-32 feet, 50 bbls. Jim Fish and others No. 5 Fish, 1,149 feet, junked. Golding & Cochran No. 1 McMurtry, 766 feet, dry. N. D. Goldsmith No. 1 Earl Beardon, 1,130 feet, dry. E. C. Harlin, Jr., No. 1 Mrs. D. Burks, 802 feet, dry. Texas Co. No. 11 Carter Brothers, 1,346-58 feet, 15 bbls. Wilson & Ligon No. 1 Mrs. E. V. Pearston, 2,732 feet, dry.

Cooke County

Dove Oil Co. No. 7 J. A. Carr, 1,914-33 feet, 150 bbls. A. D. Robinson No. 4 J. H. Otto A, 796-810 feet, 10 bbls.

(Continued on Page 94)

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T-36

North Louisiana, Arkansas

DEEP OIL SHOWING IN GAS AREA, RODESSA, LOUISIANA

By MITCHELL TUCKER

SHREVEPORT, La., Apr. 19.—The Lisbon oil field in Claiborne Parish, Louisiana, now has 16 drilling wells and four locations rigging up, and is ranked as the most active area in North Louisiana. The Schuler field of Union County, Arkansas, holds center of interest there, as one additional well is rigging up, and other locations are expected immediately.

A very important deep discovery in the Rodessa field appeared possible as the week closed. United Gas Public Service Co. No. 5 Young, NW section 27-23-16, a quarter of a mile southeast of the Rodessa oil discovery well, and in what is generally referred to as the "gas area," missed the Young Oolitic lime oil-bearing zone, and continued coring for a test of deeper zones. The Pettit lime of basal Lower Glen Rose, which is productive of oil at Sligo, Lisbon, and other fields of North Louisiana, was one of the possible objectives. This lime zone was topped at about 6,514 feet, and the first 10 feet cored in that horizon showed attractive oil and gas saturation. Two drill stem tests failed, due to mechanical reasons, and as the week closed the United company was attempting to make another drill stem test of the showing. Total depth is now 6,524 feet. Rodessa has long been regarded as having possibilities of deeper production, and such a discovery at this time would have a great bearing upon continued drilling activity there.

A total of 31,866,785 bbls. of oil has been produced from the bi-state Rodessa field as of April 1, 1937. Of this, 25,111,551 bbls. was produced from the Louisiana side, and 6,755,234 bbls. from the Texas side of the field.

North Rodessa

The fifth producer in the North Rodessa area was completed in the past week, Standard Oil Co. of Louisiana No. 2 Armistead, SE SE SW section 4-23-16, flowing 336 bbls. in 24 hours through 25/64-inch tubing choke, total depth 6,039 feet. Four other wells are nearing the completion point there.

Standard Oil Co. No. 1 W. M. Terry, SE NE SW section 9-23-16, indicates a possible new producing level for the northern extension field. Hill sand was topped at 5,770 feet, Gloyd sand at 5,880 feet, and varicolored lime at 5,972 feet. Cores from 5,951 to 5,961 feet were of highly porous Oolitic lime, carrying good oil and gas saturation. Operators are preparing to test, after setting 7-inch casing at 5,880 feet.

Just across the line in Arkansas, William Monroe Layton and others have been granted permits to drill five wells on the south end of the 40-acre E. S. Terry tract in section 14-20-28, Miller County, Arkansas. About one-half mile north of these proposed tests, McClanahan and others are preparing to spud in their No. 1 Capps, section 11-20-28, having the North Rodessa pay level as their objective.

Bottom-Hole Pressures—Texas Side

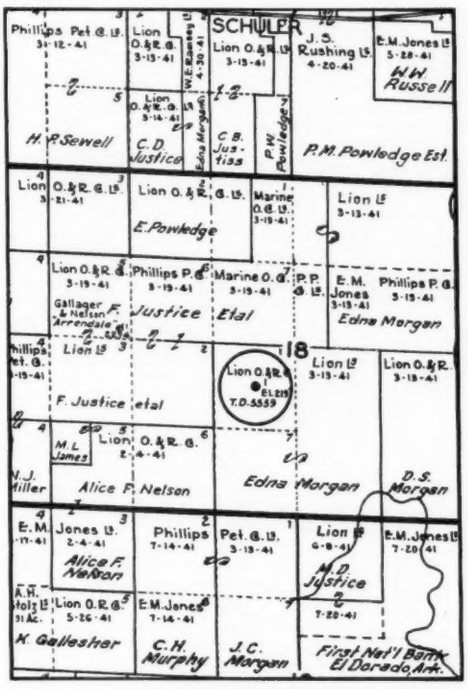
Aggregate bottom-hole pressure in the Texas portion of the Rodessa field, taken from the Railroad Commission's most recent survey, is 524,441 pounds, or an average of 2,251 pounds per well. In allocating April allowable, the pressure factor of .04023874 was used for each pound pressure in order to apportion the 17,868 bbls. daily, or 50 per cent of the total allowable. For the acreage factor, 4,239.44 acres were considered productive, giving a factor of 4.956406 bbls. per acre in order to apportion the other 50 per cent of total allowable.

Marion County—Rodessa

Arkansas-Louisiana Gas Co. No. 1 W. S. Ford, Charles Grayson Survey, near Lodi, Tex., pumped 812 bbls. of oil back into the formation in an effort to cause the well to flow, and 368 bbls. flowing production was obtained during the following 24 hours. During the last 24-hour flowing test, production was 53 bbls. of oil and 620,000 feet of gas, tubing pressure 135 pounds, casing pressure 300 pounds, total depth 6,181 feet.

The same company's No. 1 Laura McIntosh, Edminston Survey, perforated 7-inch pipe at 5,928-45 feet with 64 shots, and tested 760,000 feet of gas with about 10 bbls. of distillate daily. This well has been bottomed in the Gloyd formation at 6,010 feet, and operators are making preparation to deepen to the Dees level, oil producing sand in Rodessa proper.

The Jefferson discovery well, Holcomb and Thomason, Flesh and Hootkins, No. 1 Lizzie Henderson, Bennington Survey, has been flowing and testing during past week under varying conditions. The first day it



—Walter E. Wylie, Maps, Shreveport.

Ownership map of Schuler area

flowed 94 bbls., second day 94½ bbls., third, 97 bbls., fourth, 62 bbls., when a fishing job for an overshot developed. The hole is now clean, total depth 5,996 feet, and testing will be resumed.

Cass County, Rodessa, Completions

R. W. Norton completed No. 3 Davis, H. Holbert Survey, flowing 14 bbls. hourly through one-quarter inch tubing choke, after a 2,000-gallon acid charge, total depth 6,000 feet.

Ohio Oil Co. No. 16 R. P. Willis, S.F.I.W. Survey No. 1,263, flowed 374 bbls. in 24 hours through one-quarter inch tubing choke, total depth 5,958 feet.

The Texas Co. No. 5 N. A. Rambo, Cass County School Survey, flowed 432 bbls. daily through one-half inch tubing choke, tubing pressure 225 pounds, casing pressure 300 pounds, total depth 6,093 feet.

United Production Co. No. 1 Davis Unit, same survey, was completed as a gas well, gauging 330,000 feet, rock pressure 2,265 feet, total depth 5,732 feet.

Sugar Creek Field—Claiborne Parish

Sugar Creek Syndicate No. 1 W. Brown, northern flank test for oil at the Sugar Creek gas field, is now standing while tankage is being erected. On last test this well flowed 190 bbls. of 29.3 gravity oil in seven hours through one-quarter inch tubing choke, total depth 5,984 feet, and opened this area to production from a sand member of the Travis Peak.

The same operator's No. 1 W. M. Dobbins, section 12-19-6w, formerly a gas well from the Oolitic lime zone in the Glen Rose, is now coring below 5,325 feet and has the Travis Peak sand as its objective. Cores from 4,529-35 feet indicated lime with shows of oil and gas, and from 4,551-57 feet sand was cored showing good porosity and gas saturation.

Estimated Daily Production

Estimated daily gross production all companies week ending April 16:

NORTH LOUISIANA

	Bbls.
Bellevue	750
Caddo light	4,005
Caddo heavy	2,315
Converse	915
Cotton Valley heavy	250
Cotton Valley light	*1,700
DeSoto and Red River	1,420
Elm Grove	390
Haynesville	3,485
Holly	130
Homer	2,670
Lisbon	1,500
Pleasant Hill	130
Rodessa	48,025
Sarepta-Carterville	395
Sligo	330
Urania	2,805
Zwolle	725
Total	71,940

SOUTH ARKANSAS

Champagnolle	1,605
El Dorado	2,000
Lisbon	280
Miller County	555
Nevada	805
Smackover light	2,100
Smackover heavy	16,810
Stephens	540
Troy	1,480
Urbana	1,365
Total	27,540

Texas side of Rodessa field—41,390 bbls. daily.

*1,180 bbls. Cotton Valley light is distillate.

Caddo Parish

Bayou State Oil Co. completed No. 1 Stiles, NE NE SW section 22-22-15, in the Hosston field, pumping 15 bbls. daily, total depth 1,012 feet.

W. D. Chew No. 3 Rives, NE section 5-20-16, was a routine completion in the Caddo field, pumping 25 bbls. daily, total depth 946 feet.

Robson Oil Properties, Inc. No. 1 J. E. Cupples, wildcat test in NE cor. section 24-16-13, has been abandoned as dry at a total depth of 5,675 feet.

De Soto Parish

After being plugged and abandoned at a total depth of 3,027 feet, Grogan Oil Co. No. 1 Ramsey, section 36-11-11, DeSoto Parish (formerly reported as L. S. Fite No. 1 Ramsey), began seeping oil and making small flows around the casinghead. Grogan Oil Co. has moved in a drilling unit, and is cleaning out preparatory to testing.

Rapides Parish

The R. B. Webb and others No. 1 Brasher, section 22-4-2, Rapides Parish, a proposed 6,000-foot test about 7 miles west of Alexandria, is coring at about 5,000 feet. Attractive gas showings were reported at higher levels.

Tensas Parish

H. M. Jones and others No. 1 Chicago Mill & Lumber Co., section 30-12n-10e, Tensas Parish, was cleaned out after bridging over, following a flow of about 30,000,000 feet of gas, and well blew wild again and finally bridged

over. Gas is coming from a sand in the Cockfield formation, total depth 798 feet. Prior to blowing in last week, this well had been temporarily abandoned for about 10 months.

In order to test the gas horizon indicated by No. 1 Chicago Mill & Lumber Co., Arkansas-Louisiana Gas Co. drilled a core hole at No. 1 Baker, NE NW NE section 7-11-10, and at a total depth of 465 feet gas blew in, finally bridging over. Preparations are being made to run casing for accurate test.

Cotton Valley—Webster Parish

Seven drilling wells and six locations rigging up comprise the present deep drilling activity in Cotton Valley, Webster Parish. Additional locations are expected soon in order to hold short-term leases to the south.

Standard Oil Co. of Louisiana No. 1 E. L. Stewart, SE SE SE section 32-21-10, now rigging up about 2 miles south of present deep gas-distillate production at Cotton Valley, will undoubtedly have a great bearing on future development there. It is the opinion of some informed men that this location offers excellent possibilities for oil, being situated on the flank of the Cotton Valley-Bodcaw sand structure, which to date has produced only gas and distillate.

United Gas No. 2 J. M. Mixon, SW section 22-21-10, was completed as a gas distillate producer in the Bodcaw sand, total depth 8,231 feet, flowing 337 bbls. of distillate through one-quarter inch tubing choke in 19 hours, casing pressure 2,900 pounds, tubing pressure 2,600 pounds. No gauge of the gas was made.

ARKANSAS

Grant County

Wallace & Staples No. 1 W. F. Davis, SE SE NW section 23-6-15, has been junked and abandoned, total depth 2,382 feet, after encountering fishing job for three joints of drill pipe.

Nevada County

Benedum & Trees No. 7 Grove, NW SW NW section 10-14-20, has been completed as a gas well in the Nacatoch sand of the Troy field, gauging 30,000,000 feet, with 310 pounds rock pressure, total depth 1,283 feet.

Berry Asphalt Co. No. 2 W. Haynie, NE NE SW section 6-14-20, was a routine completion in the Troy field, pumping 60 bbls. oil and 20 bbls. water from the Nacatoch sand, total depth 1,193 feet.

William S. King No. 1, section 6-13-22, drilled through the base of the anhydrite at 1,783 feet, and topped the Travis Peak at 2,381 feet. Well is now shut down at 2,610 feet.

Union County—Schuler Field

Lion Oil Refining Co. No. 1 Edna Morgan, section 18-18-17, discovery well near Schuler, has been flowing and testing under varying conditions during the past week. On a quarter-inch choke the well flowed 12 bbls. hourly on a 24-hour test. Gas production was about 3,500,000 feet. Gravity of oil is 45.9 degrees, and no trace of water has been noted. Preliminary bottom-hole pressure test indicated 2,400 pounds, with bottom-hole temperature of 173 degrees.

Marine Oil Co. (C. H. Murphy and others) has built derrick and is rigging up for the immediate drilling of a north offset to the Schuler discovery, its No. 1 Marcus Justiss, NW quarter of section 18-18-17. Phillips Petroleum Co. is expected to announce location here shortly, and Lion Oil has indicated that a rather active drilling program will be started soon.

At a recent meeting of the Arkansas Board of Conservation, rules and regulations were promulgated for drilling of the Schuler structure. Among other stipulations, at least 100 feet of surface casing must be set, cementing with at least 25 sacks. An intermediate string at least 1,600 feet must be set and cemented from top to bottom. The oil string must be new, and weigh not less than 24 pounds per foot, and must be cemented with at least 300 sacks. A blowout preventer and drilling gate shall be installed at all times after setting intermediate pipe. All wells are to be brought in through the tubing. All well-head connections shall be of at least 5,000 pounds test pressure, or 2,500 pounds working pressure.

EAST TEXAS (Border Counties)

Cass County

In the Douglasville area of Cass County, about 15 miles north of Rodessa field, J. G. Puterbaugh and others (McAlester Fuel Oil Co.) No. 1 J. J. Doorley, Calloway Davis Survey, logged top of the chalk at 1,917 feet, indicating that this location is some 225 feet higher regionally, and conforms to the shooting picture of the area. The 9⅝-inch pipe was set at 2,065 feet, and drilling now continues in this important test below 3,200 feet.

Eastern Fields

(Continued from Page 76)

have a location for a test on the Cora A. Groves farm in Washington district. The elevation is 738 feet. H. S. Adams will drill a test on the F. M. Wilmoth heirs farm in Sherman district.

In Ritchie County, Frank Findley has a location for a test on the Lester Moore farm in Clay district. In Grant district, the South Penn Oil Co. has a location for a test on the M. C. Morris farm and in Murphy district a location for a No. 20 on the Haught-Lambert farm.

In Roane County, the Hope Natural Gas Co. has a location for a test on the Mary Goff Morford farm in Spencer district. In Tyler County, the Neely Oil & Gas Co. will drill a test on the Arzie O. Dranell farm in Union district.

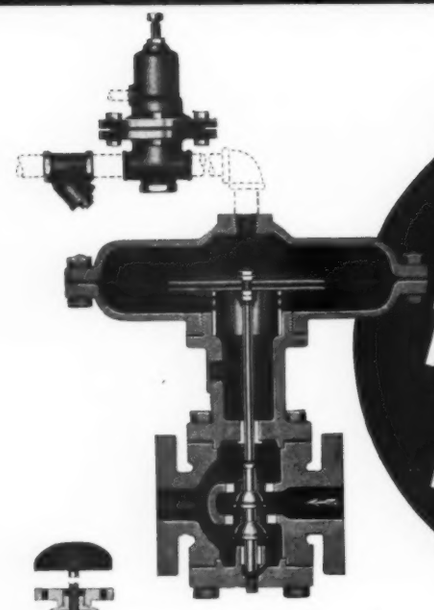
In Wayne County, the Mountaineer Gas Co. has a location for a test on the Bowen and others lease in Union district. The elevation is 635 feet. In Wirt County, Septer W. Douglas will drill a No. 55 on the Al. Blankenship farm in Spring Creek district.

Southwest Texas Fields

(Continued from Page 79)

for several years, came to the attention of operators when the Sun Oil Co. No. 1 Dietert & Oppenheimer showed considerable gas at 5,680 feet. The test is in section 7 of the G.W.T.&P.R.R. Survey, 20 miles east of Rock Springs, and casing has been set at 5,680 feet. Latest reports carry the well as cleaning.

To the south, the Balcones Fault Zone is receiving a very active play, centering in Caldwell and Guadalupe counties. The recent discovery of flush chalk production, and subsequent opening of new Edwards lime production, has spurred the activity, carried on entirely by independent operators.



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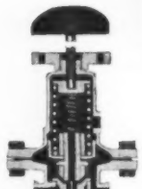

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By
DAL DALRYMPLE

EXTEND BILLINGS DEEP PAY; TULSA OPERATIONS INCREASE

The Billings pool of Noble County was extended one location west at Continental Oil Co. No. 1 Conway, SE SE NW section 21-23-2w. It topped Wilcox sand at 4,304 feet, was bottomed at 4,322 feet in sand, and flowed at the rate of 300 bbls. of oil an hour on initial tests. Estimates of gas volume ranged as high as 20,000,000 feet. Another large producer was nearing completion at Phillips Petroleum Co. and Shell Petroleum Corp. No. 8 McCaughtry, SE NW NE section 21-23-2w, which flowed 5,188 bbls. of oil in 10 hours and 30 minutes with drill pipe still in the hole. It was bottomed at 4,309 feet in Wilcox sand. Gas gauged around 19,000,000 feet. There were six drilling wells in the field at the week end, in addition to three tests reported for the first time.

Another well west of the fault line in the Crescent field, Logan County, was showing as a producer. It was Phillips Petroleum Co. No. 1 Channell, NE NE NW section 33-17-4w, which flowed 1,470 bbls. of oil through tubing in 24 hours, with 8,200,000 feet of gas. Total depth was 6,565 feet in first Wilcox sand.

A town-lot drilling campaign in Tulsa may be permitted if an ordinance, now being prepared to permit drilling in limited zones within the city, is passed by the commission. The present ordinance forbids drilling within limits. Agitation for permission to drill within the city followed completion of a gas well on property offsetting city-owned land at the western edge of town. On the other side of the city, excitement continued at the Tulsa Airport field, where five wells were nearing the pay at the week end, several others were cleaning out preparatory to going on production, a large number of tests were being drilled and leasing activity was continuing. Several wells tapped the pay, usually found between 1,000 and 1,100 feet, during the past week.

Sinclair Prairie Oil Co. No. 1 Rossanna, NW NW SW section 28-10-8, wildcat south of the Cromwell pool in Seminole County, swabbed and flowed 131 bbls. of oil in 24 hours from 4,179-89 feet. Operators expect the well to show increased production before it is completed.

Caloma Oil Co. No. 1 Brentz, SE NE SW section 4-1n-6e, wildcat in Pontotoc County, recently reported as abandoned, will resume operations and continue until completed, the operators have announced.

Pontotoc County

Ten new oil wells and one failure were reported in Pontotoc County the past week, nine of the oil wells being in the Fitts field and one in the Allen area. Skelly Oil Co. No. 3 Ingram, SW SW NW section 23-2n-7, Fitts field, topped Hunton lime at 3,741 feet, was bottomed at 3,880 feet and flowed 256 bbls. of oil through casing in one hour. It was acidized, flowed 321 bbls. net in the first hour and made potential of 5,089 bbls. Gas 1,570 pounds.

Other Fitts completions: H. L Blackstock No. 6-A Moody, SW NW SW section 23-2n-7; Hunton lime, 3,607 feet; Sylvan shale, 4,012 feet; total depth, 4,016 feet; acidized; flowed 972 bbls. of oil gross in three hours; reacidized, flowed 570 bbls. gross the first hour; potential, 3,638 bbls.

Bishop Oil Co. No. 4-A Simpson, NE NW NW section 28-2-7; Hunton, 3,448 feet; total depth, 3,720 feet; acidized; flowed 500 bbls. of oil in one hour, gross; potential, 3,253 bbls.

E. H. Moore and others No. 2 Deaner, SW SW SE section 23-2-7; Hunton, 3,716 feet; total depth, 3,800 feet; flowed 341 bbls. of oil in one and one-half hours; acidized; flowed 335 bbls. in two hours; potential, 3,103 bbls. Same operators No. 2-A Herper, SE SW NE section 29-2-7; Cromwell sand, 2,450 feet; total depth, 2,602 feet; flowed 113 bbls. of oil in six hours; later, flowed 535 bbls. in 24 hours.

Sinclair Prairie Oil Co. No. 21 Woolley B, NW SE SW section 22-2-7; Hunton lime, 3,530 feet; total depth, 3,682 feet; acidized; flowed 271 bbls. of oil in five hours; reacidized; flowed 494 bbls. in three hours; potential, 2,158 bbls.

Amerada Petroleum Corp. No. 7 Woolley, NW NW SW section 22-2-7; Hunton lime, 3,650 feet; Sylvan shale, 4,040 feet; total depth, 4,429 feet; plugged back, 4,060 feet; shot; flowed 383 bbls. in six hours; acidized; flowed 628 bbls. in two hours; potential, 3,524 bbls. Same operator's No. 9 Woolley, NW SE SE section 21-2-7; Hunton, 3,541 feet; total depth, 3,876 feet; acidized and reacidized; flowed 778 bbls. in two hours; potential, 3,982 bbls. Same operator's No. 6 Smith, SW SE NW section 28-2-7; Hunton, 3,233 feet; Sylvan, 3,498 feet; total depth, 3,500 feet; acidized; flowed 1,028 bbls. in two hours; potential, 3,203 bbls.

In the Allen district, Mary F. Oil Co. No. 4 Miller, NE SE section 16-5-8, swabbed 65 bbls. of oil in 24 hours after shot; total depth, 929 feet.

H. Woodson and others No. 1 Ivey, NE SW SW section 21-5-5, Bebee sector, was dry and abandoned at 2,718 feet, total depth.

New work in Pontotoc County: Burke-Greis Oil Co. No. 7 Chambers, NW cor. section 36-2-6, cellar and pits; Arrow Drilling Co. and others No. 2 Lewis, SW SW SE section 19-2-7, building rig; Deep Rock Oil Corp. No. 9 Harden, SW SE NE section 30-2-7, rigging up rotary; E. H. Moore No. 2-B Harper, SE SW NE section 29-2-7, building rig; Amerada Petroleum Corp. No. 15 Woolley, SW NE SE section 21-2-7, cellar and pits; same company's No. 16 Woolley, NE NE SE section 21-2-7, cellar and pits; same company's No. 8 Smith, NW SE NW section 28-2-7, cellar and pits; Magnolia Petroleum Co. No. 1 Young, SE NE NW section 22-2-7, cellar and pits; same operator's No. 19 Simpson, SW SE NE section 29-2-7, cellar and pits; Papoose Oil Co. and others No. 1 Jones, NW SE NW section 2-4-5, wildcat, location; W. A. Delaney and others No. 1 Norris, NW NW SE section 18-4-8, wildcat, location; Phillips Petroleum Co. No. 18 Norris, SE SW SW section 25-2-6, location.

Seminole County

Four new oil wells were completed and three failures registered in Seminole County. Three old wells were recompleted.

Paul Traugh No. 1 Scroggin, NE NE SE section 22-6-6, had sand at 2,350-75 feet; was bottomed at 2,730 feet; flowed 56 bbls. of oil in 24 hours, and later pumped 70 bbls. in 10 hours, completed.

Sinclair Prairie Oil Co. No. 3 Patton, NE SW NE section 18-6-8, had Gilcrease sand at 2,721 feet; total depth, 2,813 feet; and swabbed 26 bbls. of oil in 24 hours; later, flowed 25 bbls. in 24 hours. Same operator's No. 7 Hyde, NW SW NW section 2-8-5, Carr City, topped Hinton lime at 3,923 feet; Sylvan shale, 3,935 feet; Dolomite, 4,100 feet; total depth, 4,153 feet; was shot and pumped 10 bbls. of oil and 50 bbls. of water in 24 hours.

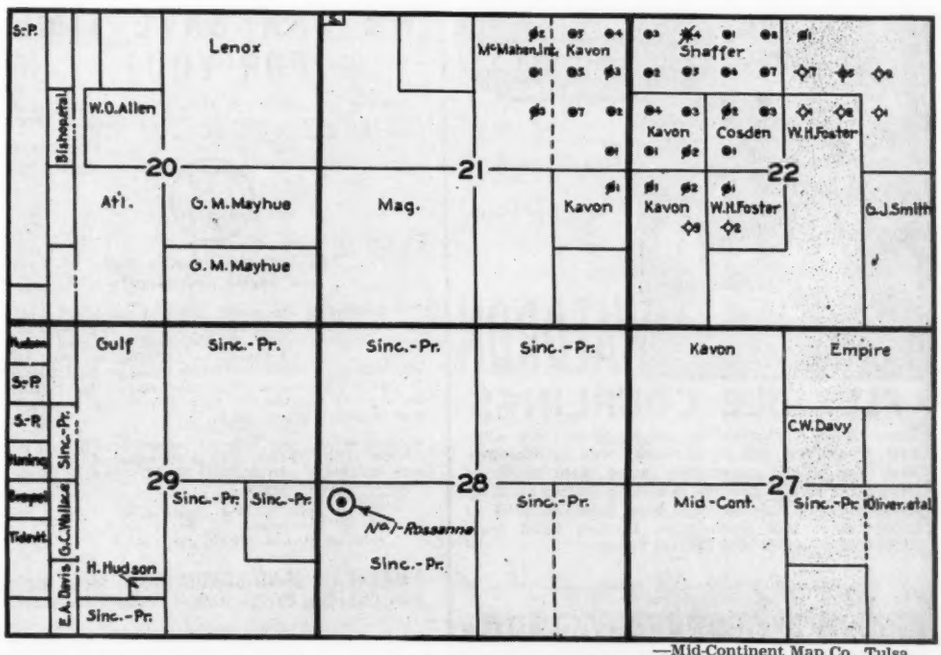
Amerada Petroleum Corp. No. 3 Parks, NE SE SW section 35-11-5, North Earlsboro, found Wilcox sand at 4,619 feet; total depth, 4,632 feet, and swabbed 824 bbls. of oil in 19 hours and 15 minutes.

Amerada Petroleum Corp. No. 1 Davis, NE cor. section 35-10-7, on the west side of the North Bethel pool, topped Cromwell sand at 3,667 feet; total depth, 3,674 feet; swabbed 65 bbls. of oil gross and 960 bbls. of water in 24 hours, and was abandoned.

In the Wewoka area, Fleetborn Oil Corp. No. 1 Dixon, NE NW SE section 28-8-8, topped first Wilcox sand at 4,263 feet ;second sand, 4,325 feet, and was dry and abandoned at 4,336 feet, total depth.

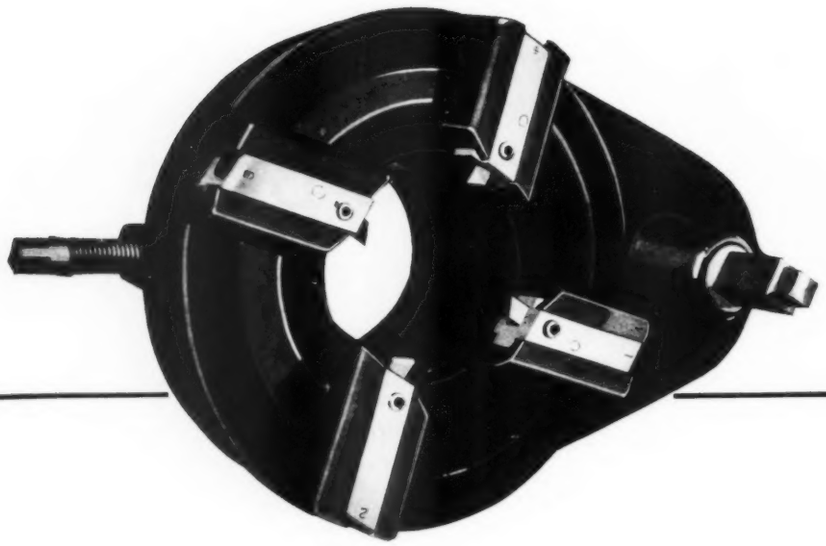
J. H. Hudson and others No. 1 Tanyan, SE SE SW section 32-10-7, wildcat, topped Calvin sand at 2,560 feet; Senora, 2,815 feet; Brown lime, 3,505 feet; Booch sand, 3,605 feet; Gilcrease, 3,670 feet; Cromwell, 3,718 feet; Mayes, 4,190 feet; Woodford, 4,295 feet; Misener, 4,324 feet; Hunton 4,326 feet; Sylvan, 4,470 feet; Viola, 4,565 feet; Dense, 4,600 feet; Dolomite, 4,610 feet; first Wilcox, 4,630 feet; and was dry and abandoned at 4,632½ feet, total depth.

Sinclair Prairie Oil Co. No. 2 Jones, NE SE SE section 9-8-6, an old well in the Bowlegs area, was plugged back from 4,103 feet to 3,338 feet, ripped casing, showed only two bailers of oil and was abandoned. J. D. Campbell No. 2 Campbell, NE SW NE section 17-9-7, an old



—Mid-Continent Map Co., Tulsa.

A new producing area has been opened southwest of the old Cromwell field, Seminole County, at Sinclair Prairie Oil Co. No. 1 Rossanna, section 28-10-8



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well in East Seminole area, was deepened from 3,374 feet to 3,431 feet; plugged back to 3,382 feet and pumped 12 bbls. of oil in 24 hours, recompleted. Magnolia Petroleum Co. No. 2 Crouse, SW SE SE section 2-7-6, an old well in the Little River district, deepened from 4,151 feet to 4,227 feet; plugged back to 4,213 feet, pumped 25 bbls. of oil in 24 hours and was recompleted.

New work in Seminole County: Stuart, Hall and others No. 1 Stuart, SE SW NE section 30-6-8, rigging up machine; Creekmore & Wolf No. 1 Campbell, SW NW NW section 20-9-7, an old well, preparing to run casing at 4,050 feet, total depth; Amerada Petroleum Corp. and others No. 2 Riddle, SE NW NE section 2-10-5, cellar and pits; Carter Oil Co. No. 1 Parsons, C E half NW SW section 14-10-6, an old well being deepened, drilling at 4,198 feet; Amerada Petroleum Corp. and others No. 3 Noble, SE SE SW section 25-10-7, building rig; same operator's No. 4 Pryor, NE NE NW section 36-10-7, cellar and pits.

Okfuskee County

Largest of four completions in the Olympic field, Okfuskee County, was Ark Royalty Co. No. 9 Fisher, SW NE SE section 18-10-9. It topped Senora sand at 1,852 feet; was bottomed at 1,908 feet; shot and pumped 75 bbls. of oil in 24 hours.

J. F. Smith and others No. 1 Ott, SW cor. section 8-10-9, pumped 35 bbls. of oil in 24 hours from Senora sand at 1,837 feet; total depth, 1,888 feet, after a shot. Oklahoma Oil Corp. No. 3 Ott, NE NW NW section 19-10-9, had Senora sand at 1,883 feet; was bottomed at 1,904 feet; was shot, and pumped 35 bbls. of oil and 30 bbls. of water in 24 hours. Sinclair Prairie Oil Co. No. 4 Schultz, NW NE NW section 18-10-9, topped Senora sand at 1,852 feet; total depth, 1,873 feet; was shot and swabbed 42 bbls. of oil in 18 hours; later, swabbed 30 bbls. of oil and 25 bbls. of water in 24 hours.

In the Weleetka area, Holt and others No. 1 Sands, NW NE NW section 28-10-11, had lower Gilcrease sand at 2,662-80 feet, total depth, and swabbed 60 bbls. of oil and 20 bbls. of water in 24 hours.

The following new work in Okfuskee County was reported: Chapman & McFarlin No. 5 Williams, SE SW SW section 25-10-8, location; Manahan Oil Co. No. 19 Dalton, NW SE SW section 36-10-8, cellar and pits; Sinclair Prairie Oil Co. No. 9 Fisher, NE SW SW section 19-10-9, moving in rig; Oklahoma Oil Corp. No. 1 Campbell, SE SE NE section 8-10-9, wildcat, cellar and pits; Burke-Greis Oil Co. No. 1 Butler, SE SE NE section 19-10-10, an old well, preparing to drill deeper.

Pottawatomie County

Amerada Petroleum Corp. No. 3 Goodman, NW NE NE section 5-10-4e, Shawnee pool, Pottawatomie County, had Earlsboro sand at 4,382 feet; total depth, 4,427 feet; swabbed and flowed 100 bbls. of oil in 13 hours; was shot and flowed 162 bbls. of oil through tubing in 24 hours.

Reynolds Drilling Co. No. 1 Shenbert, SE SW NE section 29-7-4, St. Louis area, was bottomed at 4,400 feet; plugged back to 3,900 feet, ripped casing but water intruded and it was dry and abandoned.

Champlin Refining Co. No. 1 Buckler, SE NE NE section 7-6-4, wildcat, had Earlsboro sand at 3,888 feet; Mayes, 4,125 feet; Sycamore, 4,160 feet; Woodford, 4,165 feet; fault zone, 4,405 feet; Sylvan, 4,424 feet; Viola, 4,526 feet; showing of oil, 4,565-75 feet; Dense, 4,575 feet; sandy Dolomite, 4,766 feet; Wilcox sand, 4,771 feet, and was dry and abandoned at 4,783 feet.

Tests starting in Pottawatomie County were as follows: Denver Producing & Refining Co. No. 1 Risenhoover, SE NE NE section 14-7-4, location; Producers, Inc., No. 4 Cardwell, NW SW NW section 15-7-4, rigging up rotary; Indian Territory Illuminating Oil Co. No. 1 McGee, SE NE NW section 26-7-4, an old well being deepened, drilling at 4,126 feet; Magnolia Petroleum Co. No. 2 Engle, SE SE NE section 34-7-4, building rig; T. F. Smith No. 2 Brandenberg B, NE SE SW section 34-8-4, rigging up rotary.

Oklahoma County

Continental Oil Co. No. 10 Young, NW SW NW section 31-14-3w, Edmond pool, Oklahoma County, had second Wilcox sand at 6,638 feet; total depth, 6,675 feet; flowed 965 bbls. of oil in four hours, making potential of 5,790 bbls., with 12,000,000 feet of gas. Amerada Petroleum Corp. and Stanolind Oil & Gas Co. No. 5 Sunteram, NW SE NE section 6-13-3w, had second Wilcox sand at 6,626 feet; total depth, 6,675 feet; was shot, flowed 109 bbls. of oil in four hours and made potential of 654 bbls.

Transwestern Oil Co. and Sinclair Prairie Oil Co.

No. 1 Meeker, NW NE NW section 29-13-3w, Britton sector, had Simpson Dense at 6,568 feet; was bottomed at 6,598 feet; flowed 407 bbls. of oil in four hours, making potential of 2,442 bbls.

New work in Oklahoma County: Ohio Oil Co. No. 4 Hathaway, NW cor. section 6-13-3w, was a location; Ohio Oil Co. No. 4 McMillan, SE NW SW section 31, No. 5 McMillan, NE SW SW section 31, No. 6 McMillan, NW SW SW section 31 and No. 7 McMillan, S cor. section 31-14-3w, were locations; Ohio Oil Co. No. 3 Messer, SW NW SW section 32-14-3w, was a location.

Estimated Daily Production

Estimated daily average production of Oklahoma for the week ending April 17, and for the preceding week, was as follows:

	Barrels — Apr. 17	Apr. 10
Allen	6,350	6,325
Burbank	7,625	7,650
South Burbank	16,175	16,250
Balance Osage	21,500	21,500
Blackwell district	5,100	5,125
Bristow-Slick	7,775	7,750
Chandler	3,450	3,475
Crescent	15,050	12,575
Cromwell	3,300	3,250
Cushing-Shamrock	10,250	10,225
Duncan district	3,875	3,825
Edmond	20,075	24,375
Fish	6,200	6,325
Fitts	94,475	84,025
Graham	4,750	4,725
Gray	1,325	1,350
Healdton	9,650	9,675
Hewitt	4,325	4,300
Holdenville	950	950
Keokuk	9,300	7,275
Lucien	14,350	13,500
Moore	14,500	12,050
Oklahoma City	167,225	165,425
Olympic	15,450	15,725
Papoose	900	900
Polo	1,675	1,700
Sasakwa and townsite	3,150	3,250
Sholem-Alechem	3,250	3,225
Seminole:		
Bowlegs	11,775	11,525
Carr City	5,825	6,000
Earlsboro	6,525	6,775
South Earlsboro	675	675
East Earlsboro	7,725	7,700
Little River	11,175	11,175
East Little River	1,225	1,250
Maud	775	750
Mission	2,275	2,250
Seminole	9,450	9,675
East Seminole	3,325	3,375
Searight	4,925	4,625
Total Seminole	65,675	65,775
St. Louis-Pearson	23,075	23,350
Tatums	4,775	4,800
Tonkawa-Garber-Thomas	10,200	10,250
Wewoka	3,500	3,475
Yale-Jennings	4,175	4,150
Other pools	74,000	73,100
Total Oklahoma	657,400	641,625

Osage County

Lewis Production Co. No. 14 Osage, SE NE NE section 28-24-7, Naval Reserve area, Osage County, had Bartlesville sand at 2,613 feet; total depth, 2,710 feet, was shot and flowed 306 bbls. of oil in 24 hours. Lewis Production Co. and Texas Co. No. 8 Osage, NW SE SE section 17-24-7, flowed 193 bbls. of oil in 24 hours from Bartlesville sand at 2,631 feet; total depth, 2,653 feet.

Kewanee Oil & Gas Co. No. 4 Alfred, NW NW NE section 26-26-6, South Burbank area, found Bartlesville sand at 2,870 feet; was bottomed at 2,960 feet; plugged back to 2,897 feet, was shot and flowed 56 bbls. of oil by heads in 24 hours.

Ohio-Osage No. 7 Osage, NE SE SW section 36-22-8, pumped 35 bbls. of oil in 24 hours and was completed at 463 feet, total depth.

Kewanee Oil & Gas Co. No. 2 Osage, NE SE SW section 27-26-6, was a location. Same operator's No. 8 Osage, NE SW SW section 28-21-12, an old well, was preparing to drill deeper.

Noble County

Tide Water Oil Co. No. 3 Hackett, SE NW SE section 21-23-2w, Billings pool, Noble County, had Wilcox sand at 4,297 feet; total depth, 4,324 feet; flowed 695 bbls. of oil in six hours, making potential of 2,677 bbls. Gas averaged 7,250,000 feet.

Tests starting in Noble County: Magnolia Petroleum Co. No. 1 Forsythe, SE SE SW section 23-21-2w, wildcat, rig; F. W. Dye and others No. 1 Dolezal, SE SE SW section 8-22-1w, wildcat, was moving in material; Tide Water Oil Co. No. 5 Hackett, SW NW SE section 21-23-2w, digging cellar; Phillips Petroleum Co. and Shell Petroleum Corp. No. 10 McCaughtry, NW SW NE section 21-23-2w, cellar; same operators' No. 11 McCaughtry, NW SE NE section 21-23-2w, digging cellar.

Logan County

Helmerich & Payne and others No. 1 Fred Ruck, C NE SE section 9-19-2w, Logan County wildcat, topped Oread at 3,060 feet; Tonkawa, 3,180 feet; Avant, 3,670 feet; Layton, 4,095 feet; Oswald, 4,760 feet; Mississippi, 5,105 feet; Chattanooga, 5,240 feet; Viola, 5,335 feet; first Wilcox sand, 5,425 feet; total depth, 5,442 feet, and was dry and abandoned.

Amerada Petroleum Corp. and Stanolind Oil & Gas Co. No. 3 Fouts, NE cor. section 14-17-1w, Langston area, was a location.

Pawnee County

O. O. Mittendorf and others No. 1 Wittick, NE SE NE section 32-20-5, was an abandoned location.

E. O. Platter No. 2 Bunch, NW NW SW section 4-20-9, was drilling at 665 feet.

Hughes County

Southwest Gas Utility Co. No. 2 Foster, NW SE SE section 11-7-8, Holdenville area, Hughes County, was completed as a 5,000,000-foot gas well at total depth of 1,838 feet.

Rogers & Rogers No. 1 Bunner, NE NW NE section 14-9-8, southwest end of Olympic field, topped Senora sand at 1,854 feet; had a hole full of water at 1,905 feet, total depth, and was abandoned.

Empire Oil & Refining Co. No. 1 Born B, SE SW NW section 20-7-8, Fish area, Hughes County, had dug cellar and pits. Car Rock Oil Co. No. 1 Parks, SW SW SE section 34-7-8, an old well being deepened, was drilling at 1,600 feet. Charles Thornton No. 1 Eason, NE NE NW section 7-9-11, wildcat, had dug cellar and pits.

Lincoln County

Sun Oil Co. No. 1 Aranwine, NE SW SE section 35-15-2e, Wellston area, Lincoln County, topped first Wilcox sand at 5,083 feet; total depth, 5,099 feet; acidized and flowed 485 bbls. of oil in 12 hours.

Amerada Petroleum Corp. and others No. 1 Holik, SE SE NW section 10-12-5e, Wilzetta district, had Hunton lime at 4,308 feet, was bottomed at 4,325 feet, acidized and swabbed 612 bbls. of oil gross in 23 hours; later pumped 189 bbls. of oil and 126 bbls. of water in 21 hours.

Two new tests in Lincoln County were reported: Stanolind Oil & Gas Co. and Amerada Petroleum Corp. No. 1 Aranwine, SE NW SE section 35-15-2e, was a rig; Coline Oil Co. No. 1 Davenport, SE SW NW section 1-14-3e, was shut down at 3,270 feet.

Garvin County

Carter Oil Co. No. 1 Wright, NE NE SE section 32-1n-3w, Tussy pool, Garvin County, pumped 90 bbls. of oil, with 2 per cent water, and was completed at 2,672 feet, total depth. Cox & Hamon No. 1 Harris, SE SE NW section 32-1n-3w, was bottomed at 2,996 feet; plugged back to 1,930 feet, flowed 25 bbls. of oil, with 15,400,000 feet of gas and was completed.

Cox & Hamon No. 1 Craig, SE NE NW section 32-1n-3w, had dug pits.

Okmulgee County

Reliance Oil Co. No. 7 Anthis, NE NW NW section 26-16-11, Okmulgee County, had sand at 2,910 feet; total depth, 2,931½ feet; pumped 3 bbls. of oil daily and was completed.

Reliance Oil Co. No. 5 Childers & Anthis, SE NW NE section 27-16-11, was drilling at 2,471 feet. W. B. Coyle No. 7 Goldman, NW SE SW section 33-14-14, was a location.

Creek County

Mid-Continent Petroleum Corp. No. 18 Barnett, SE SE NE section 22-17-7, Cushing field, produced 1,100,000 feet of gas and was completed.

Ohio Osage Oil Co. No. 1-A Massey, NW NE NE section 13-17-10, Kellyville area, was dry and abandoned at 790 feet, total depth. Tibbens No. 2 Washington, SE NE NE section 27-15-8, had Prue sand at 2,416-63 feet, total depth, and was dry and abandoned.

Tulsa County

Johnson Oil & Refining Co. No. 2 Grimes, NE NE SW section 31-19-10, Tulsa County, had Red Fork sand at 2,245 feet; total depth, 2,284 feet; was shot and flowed 200 bbls. of oil in 24 hours.

S. W. Anthony No. 3 Wilcox, C N half N half NW section 3-16-12, an old well in the Independent pool, was deepened from 1,710 feet to 2,288 feet and flowed 700 bbls. of oil in 24 hours.

Tests starting in Tulsa County included Johnson Oil Refining Co. No. 1-B Lowder, NW NW SE section 31-19-10, rigging up machine. B. Roberts and others No. 1 Quinn, C N half SE SE section 27-19-10, spudded; Gil-

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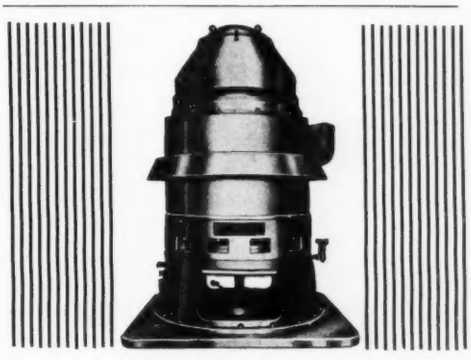

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mort Oil Co. No. 1-A Donaldson, NW NE SW section 24-18-12, set 12¼-inch casing at 60 feet.

Carter County

Carter Oil Co. No. 40 Ward, SE NE NW section 6-4s-3w, Healdton field, Carter County, was bottomed at 1,146 feet; plugged back to 1,140 feet, pumped 46 bbls. of oil in 24 hours and was completed. Roy M. Johnson No. 16 Davis, SW SE NW section 6-4s-3w, pumped 6 bbls. of oil in 24 hours after plugging back to 1,105 feet, from total depth of 1,155 feet.

Carl Carter No. 4-A Harley, SW NW NW section 19-2s-3w, Milroy area, pumped 10 bbls. of oil in 24 hours and was completed at 428 feet, total depth.

Lyle-Wham Development Co. No. 1 Jackson, NE SW SW section 26-5s-1e, wildcat, was dry and abandoned at 881 feet, total depth.

Sun Oil Co. No. 4 Davis, SW NE SW section 23-2s-3w, an old well in the Fox field, pumped 7 bbls. of oil and was recompleted after deepening from 2,921 feet to 2,987 feet and plugging back to 2,914 feet.

New work in Carter County: Simpson & Fell No. 4 Davis, NE SW NW section 9-2s-2w, derrick; Ideal Oil & Gas Co. No. 12 Scroggins, SE cor. section 32-3s-3w, location; Sinclair Prairie Oil Co. No. 19 Mullin, C N half SE NE section 4-4s-3w, machine; Roy M. Johnson No. 19 Davis, SW NE SW section 6-4s-3w, drilling at 235 feet; Kewanee Oil & Gas Co. No. 5 Ferguson, NW SE NW section 6-4s-3w, an old well deepened from 1,161 feet to 1,195 feet and plugged back to 1,114 feet, rigging up to pump; same company's No. 9 Ferguson, NW SE NW section 6-4s-3w, location; Pure Oil Co. No. 25 Westheimer & Daube, NW cor. section 10-4s-3w, rigging up machine.

Marshall County

Paul R. Robb No. 1 Vittitoe, C NE SE section 11-5s-4e, an old Marshall County wildcat that was deepened from 3,517 feet to 5,461 feet, and which has been standing idle for nearly a year, was abandoned.

Stephens County

Raizen Brothers No. 13 Price, SW SE SW section 10-3s-5w, Loco area, Stephens County, pumped 8 bbls. of oil in 24 hours and was completed at 1,440 feet, total depth. Mudge Oil Co. No. 44 Woods, C NE NW section 26-1s-5w, Velma area, was bottomed at 1,062 feet; plugged back to 1,056 feet and pumped 4 bbls. of oil in 24 hours.

Shirley Clum No. 4 Gilmore B, C N half NW SE section 10-2s-5w, was abandoned at 1,660 feet, total depth. Armor Oil & Gas Co. No. 2 Montgomery, NW NW SE section 11-2s-8w, Comanche area, was abandoned at 1,504 feet, total depth.

Ed Parson No. 1 Olson, C SW SW section 21-2n-8w, wildcat that has been idle for several weeks, was dry and abandoned at 7,002 feet, total depth.

First reports of new work in Stephens County: William Angle and others No. 1 Lang, SW SW NE section 24-1n-7w, wildcat, had dug cellar and pits; Mudge Oil Co. No. 45 Woods, C NW NW section 26-1s-5w, drilling at 1,130 feet; same company's No. 46 Woods, C E half NW NW section 26-1s-5w, rigging up; George L. Pace and others No. 1 Tah-Su-Dah, SE NW SW section 27-1s-9w, wildcat, derrick; Carl Carter No. 5 Harley, NE SE NE section 24-2s-4w, total depth 427 feet, production estimated at 7 bbls. daily; same operator's No. 6 Harley, NE NE SE NE section 24-2s-4w, rigging up machine; George L. Pace and others No. 5 Duncan, SW NW NE section 28-2s-7w, rigging up machine.

Jefferson County

Bridwell Oil Co. No. 10 Wahlgemuth, NE NW NW section 30-6s-5w, Jefferson County, had sand at 1,487-1,514 feet, total depth, and pumped 112 bbls. of oil in 24 hours. Same company's No. 8 Wahlgemuth, NE NW NW section 30-6s-5w, was completed at 1,520 feet, total depth, pumping 20 bbls. of oil and 3 bbls. of water in 24 hours. Palmer and others No. 2 Grayson, SW SE SW section 19-6s-5w, was bottomed at 1,547 feet; plugged back to 1,530 feet and pumped 10 bbls. of oil in 24 hours.

A. T. Campbell and others No. 2 Trout, NE NE SE NE section 6-8s-7w, Jefferson County wildcat, was a machine; Bridwell Oil Co. No. 12 Wahlgemuth, NW NE NW section 30-6s-5w, set casing and was waiting on cement at 1,485 feet, total depth.

Other First Reports

In Kay County, Higdon and others No. 1 Nieman, NE NW NE section 9-26-3e, wildcat, was drilling at 200 feet.

In Payne County, Summit Drilling Co. No. 1 Sharp, C NE SE section 8-19-6w, was digging cellar.

In Comanche County, E. E. Reynolds and others No. 2-A Truitt, NE NW SE SE section 26-2n-11w, was drilling at 195 feet.

In Grady County, T. H. McCasland No. 4 Horton, SW NE NW section 8-3n-5w, was a location.

In Cotton County, Shasta Oil Co. No. 1 School Land, SW SE SE SW section 36-1s-10w, was drilling at 1,500 feet.

In Beckham County, Carter Oil Co. No. 1 Porter, C SW SW section 36-10-25w, wildcat, was a location.

West Texas Fields

(Continued from Page 88)

Schermerhorn Oil Co. No. 11 F. J. Hess, 786-1,302 feet, 2 bbls., plugged back to 789 feet. Seitz, Comegys & Seitz No. 19 R. W. Trew A, 1,203-13 feet, 35 bbls. Vindicator Oil Co. No. 12 J. Walterscheid, 765-94 feet, 25 bbls.

Jack County

Beard & Collier No. 2 W. R. T. Ezzell A, 2,920-53 feet, 520 bbls.; No. 1 W. R. T. Ezzell C, 2,917-37 feet, 330 bbls. Bennett Petroleum Corp. No. 8 W. J. Chambers, 2,925-3,015 feet, 250 bbls.; No. 1 S. M. Jones, 3,140-60 feet, 290 bbls. Carpenter Oil Co. No. 1 Johnson Brothers, 712 feet, dry. Corvette Oil Corp. No. 3 J. R. Clayton, 2,958-90 feet, 445 bbls. Danciger Oil & Refining Co. No. 1 Kinger-Moore, 3,104 feet, dry. R. H. Dearing & Son No. 1 Raley, 3,165-3,246 feet, 400 bbls. W. P. Dearing and others No. 1 S. M. Jones, 3,165-3,230 feet, 405 bbls. Deep Oil Development Co. No. 3 J. M. Birdwell, 2,920-3,013 feet, 110 bbls. Edwards, Knowles & Crespi No. 2 J. A. and J. B. Simpson, 2,960-80 feet, 100 bbls. C. L. Ganaway and others No. 1 J. W. Maxey Estate, 520 feet, dry. Hamilton Petroleum Co. No. 3 F. H. Rhodes, 2,961-3,032 feet, 660 bbls. Hanlon Buchanan and others No. 2 T. T. Bouldin, 2,700-2,741 feet, 60 bbls. T. D. Humphrey No. 3 G. T. and W. J. Smith, 2,962-85 feet, 200 bbls. H. R. Montgomery and others No. 1 L. M. Chambers, 2,954-82 feet, 50 bbls. Ohio Fuel Supply Co. No. 1 D. A. Nichols, 3,311 feet, dry. Owenwood Pool No. 3 No. 2 Jones, 3,057-89 feet, 150 bbls.; No. 3 Jones, 3,017-3,050 feet, 145 bbls. O. J. Perrin No. 5 Clayton, 3,008-23 feet, 388 bbls. States Oil Corp. No. 1 D. C. Clayton C, 2,967-85 feet, 20 bbls.; No. 1 J. W. Coley, 3,107-47 feet, 8 bbls.

Clay County

Bridwell Oil Co. No. 7 Saner and others, 300 feet, dry. Metzner & Burns No. 17 T. C. Thornberry, 352 feet, dry.

Denton County

Bolivar Drilling Co. No. 1 J. P. Knox, 1,953 feet, temporarily abandoned, dry. J. C. Foster No. 1 Jeffcoat, 3,035 feet, dry.

Grayson County

Galbraith and others No. 1 Singletary, 3,862-80 feet, total depth 4,219 feet, 25 bbls. oil, 10 bbls. salt water.

Montague County

Bridwell Oil Co. No. 2 F. H. Begley C, 1,788-98 feet, 170 bbls. Lesh & McCall No. 13 R. W. Cunningham A, 917-41 feet, 100 bbls. Perkins & Cullum No. 1 Mrs. M. H. Salmon (Hoben), 910-35 feet, 5 bbls. Sinclair Prairie No. 8 D. T. Holt, 1,685-1,719 feet, 230 bbls.

Wichita County

Bridwell Oil Co. No. 5 W. B. Honaker, 993-1,037 feet, 25 bbls.; No. 6 W. B. Honaker, 1,026 feet, junked. L. T. Burns No. 21 Waggoner, 900 feet, dry. Duke and others No. 4 Guyer, 163 feet, dry; No. 1 L. F. Ramming, 263 feet, dry. King Oil Co. No. 3 M. M. Stone A, 1,634-37 feet, 295 bbls. E. B. Madden No. 14 Madden, 445-51 feet, 2 bbls. Melat & Graham No. 1 Munger C, 3,710-3,878 feet, 541 bbls. Perkins & Cullum No. 25 Burnett, 1,574-80 feet, 20 bbls. I. B. Persky No. 3 Foster, 1,803 feet, temporarily abandoned. George Proctor No. 7 Foster A, 1,136 feet, dry; No. 3 Goetze, 1,140 feet, dry. A. M. Rowe No. 9 Waggoner, 1,923 feet, dry. E. J. Stump No. 1 Perkins Cullum, 1,828 feet, dry. Wilson & Ligon No. 1 Foster, 900 feet, dry.

Young County

S. S. Alexander No. 1 M. L. Clark, 845-52 feet, 35 bbls. Paul Atchley No. 3 Atchley, 1,070 feet, dry. Cable Oil Co. No. 34 Mrs. S. E. Snider, 551-96 feet, 4 bbls. Duncan Holt and others No. 18 S. M. J. Benson, 898-906 feet, 100 bbls. Mrs. Jesse Kolius No. 9 J. D. Hall, 876-889 feet, 10 bbls. A. H. and S. P. Schmitt No. 11 T. J. Routon, 682-95 feet, 10 bbls. Milton J. Welch No. 1 M. S. Mahler, 531 feet, dry. Wooten & Wilson No. 1 Bullock, 970 feet, dry.

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East and East Central Texas

OPELIKA AREA IN HENDERSON COUNTY BECOMES IMPORTANT

By L. E. BREDBERG

DALLAS, Tex., Apr. 18.—Tide Water Associated Oil Co., Seaboard Oil Corp. and Humble Oil & Refining Co. report a deep gasser showing oil from the Trinity in the Opelike area in northeastern Henderson County.

This well, No. 1 McElreath & Suggett, in the W. P. Wyche Survey, 1½ miles northwest of Opelika, and on a block of 12,000 acres held by the three companies, is shut down at 7,195 feet to set casing after killing the well with heavy mud and making a Schlumberger survey. It blew in with a heavy gas pressure, showing some oil on the slush pit that tested 33 gravity and was light brown in color. With only 1,771 feet of 13⅜-inch casing in the hole, and so much open hole there was danger that the well would get out of control, consequently it was killed in order to run more pipe preparatory to testing.

The gas and oil is believed to be coming from the Glen Rose in which Tide Water and Seaboard Oil Corp. have two wells in the Cayuga field in northwestern Anderson County, about 30 miles southwest of this new strike, which took 1,350 pounds pressure to pump the prepared mud into the hole, which built up 750 pounds pressure when shut in. Elevation is 394 feet.

This is the first important strike in the district, since the Paluxy sand paid off in the Sulphur Bluff field in Hopkins County last June. It will result in a rush for leases in that part of the county, in which companies took leases in various Woodbine areas on the basis of exploring for deeper production.

The production is near three dry holes, two of which were carried only into the Woodbine, but after the deep discovery was made in the Cayuga field the three companies went into the Opelika area and took leases which other operators had relinquished after the shallower holes were abandoned. One of these tests went to the Georgetown. It was drilled by the Pure Oil Co. three years ago.

It will probably be a week or more before casing is run and cemented and a test made, but in the meantime leasing and royalty buying will advance at a hot rate.

Long Lake Test

The Trinity test of the Tide Water Associated and Seaboard Oil Corp., the first to be drilled in the Long Lake field in southwestern Anderson County, cored 22 feet of porous lime at 8,833-55 feet and is now shut down to make a drill stem test in the Lower Glen Rose. The core carried a gas odor. It is in the S. Sanchez Survey No. 11, and is known as No. 7 Monning Brothers. Elevation is 233 feet.

Van Trinity Test

The Humble Oil & Refining Co.'s Trinity test on the northeast flank of the Van structure in Van Zandt County, topped the Paluxy at 4,645 feet, surface elevation 457 feet, and is shut down at 4,664 feet straightening crooked hole. It recovered 10 feet of white sand and sandy shale in a core at 4,650-60 feet, testing salt water. Location is on the Riggs farm in the William Daniels Survey. This is the third Trinity test drilled on the edges of the Van field, one on the northwest and one on the east having proved dry in the Trinity.

The Placid Oil Co. and others No. 1 J. E. Elliott, located in the J. M. Procella Survey, 5½ miles northeast of Grapeland in northern Houston County, is coring to the Georgetown lime where it will run and cement pipe which will be perforated in the Woodbine sand logged at 5,872-79 feet. It is now down 6,300 feet.

The American Liberty Oil Co. and others No. 1 Bean, about one-half mile southwest of the same company's gas discovery west of Grapeland, in northern Houston County, has shut off water and tested 15,000,000 feet of gas after perforating casing at 6,018-36 feet. It was drilled to a total depth of 6,253 feet which it struck water, but was plugged back to get a shutoff. Another test will be drilled northwest of the discovery on the same structure.

Another Hopkins Wildcat

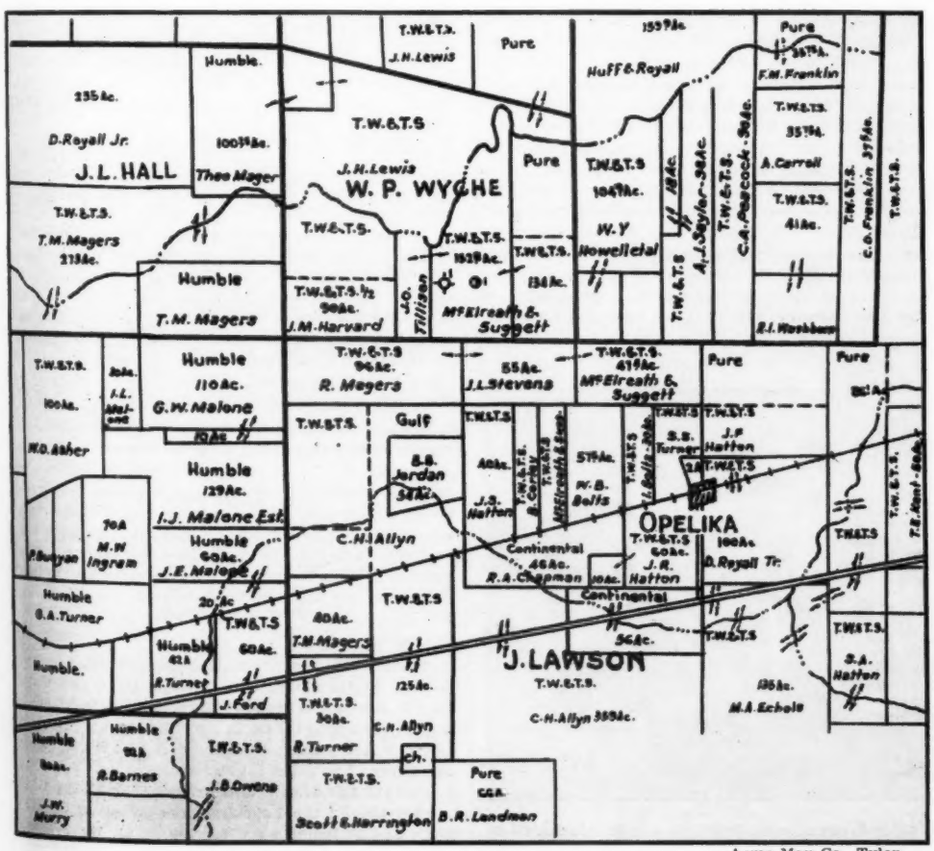
The H. & W. Development Co., headed by V. A. Hughes and S. A. Williams, who have a 6,700-acre block in the southwestern part of Hopkins County, have started moving in material for a wildcat on lands of the Pan American Life Insurance Co. in the Agaton Caro Survey, which area was geologized by F. H. Douglas of Dallas. It will be another fault line test and may be carried to 6,500 feet. The operators are from Washington, D. C.

Henderson Wildcat

In the old LaRue sector 16 miles east of Athens in Henderson County, in the old Shell Petroleum Corp. dome area where several wildcat Woodbine sand tests have been drilled as failures, a wildcat is slated to be drilled on the southwest flank of the structure, south of LaRue, and in the Phillip Jackson Survey. It will test the Woodbine, but will be carried down to the Trinity if the Woodbine is barren.

Deep Test in Hopkins

The H. & W. Development Co. is reported to be spudding a 6,500-foot test in the NW cor. of the Pan American 136½-acre tract in the Agaton Caro Survey in Hopkins County.



—Acme Map Co., Tyler.

The Tide Water Associated Oil Co., Seaboard Oil Corp. and Humble Oil & Refining Co. have opened a deep pay in the Trinity series in the Opelika area in Henderson County on the McElreath & Suggett lease. It may be a week before the well is completed

EAST TEXAS COMPLETIONS

Gregg County

Fain-McGaha No. 10 Clemens, 3,595-3,625 feet, 27 bbls. in 15 minutes. Humble Oil & Refining Co. No. 9 Wells, 3,682-3,744 feet, 52 bbls. per hour. T. D. Humphrey No. 1-C Branson, 3,625-38 feet, 35 bbls. per hour. B. F. Phillips No. 1 Mitchell, 3,590-3,601 feet, 25 bbls. Stanolind Oil & Gas Co. No. 11 Hineman, 3,627-93 feet, 54 bbls. per hour; No. 53-B McKinley, 3,610-63 feet, 45 bbls. per hour; No. 26 Persons, 3,483-3,548 feet, 63 bbls. per hour. Almo Oil Co. No. 1-B Luce, 3,548-54 feet, 20 bbls. in 15 minutes. L. W. Callender and others No. 19 Waler, 3,602-03 feet, 20 bbls. in 20 minutes. T. Flannigan Producing Co. No. 8 Walker, 3,606-08 feet, 20 bbls. in 30 minutes. Gralenor Oil Corp. No. 10 King, 3,667-68 feet, 20 bbls. in 30 minutes. Gulf Oil Corp. No. 29 Holt, 3,589-97 feet, 55 bbls. per hour. T. D. Humphrey No. 3-B Spear, 3,642-67 feet, 30 bbls. in 30 minutes. Lipscomb-Thruman No. 5 Martin, 3,664-65 feet, 15 bbls. in 20 minutes. Alex McCutchin No. 5 Martin, 3,525-85 feet, 20 bbls. in four hours on pump. Shasta Oil Co. No. 5 Laird, 3,522-40 feet, 30 bbls. in 20 minutes. Shell Petroleum Corp. No. 27 Elder, 3,554-92 feet, 37 bbls. in 30 minutes; No. 41 Elder, 3,549-76 feet, 40 bbls. in 30 minutes. Tide Water Associated No. 18 King, 3,560-80 feet, 5 bbls. in five minutes. Trentman and others No. 7 Thomas, 3,714-15 feet, 10 bbls. in 15 minutes. Friedman and others No. 9 Mayfield Grocer, 3,686-87 feet, 18 bbls. in 30 minutes; No. 13 Mayfield, 3,683-84 feet, 17 bbls. in

(Continued on Page 98)

Texas and Louisiana Gulf

DRY GAS IN WHARTON AND NEW SAND IN MATAGORDA

By
F. L. SINGLETON

HOUSTON, Tex., Apr. 19.—The completion of a dry gas well on the Blue Basin Prospect, southern Wharton County, and the discovery of a new sand in the Bay City field in Matagorda County, were the featured developments along the Texas Gulf Coast the past week.

Texas Co. No. 1 Gus Kluck, in the Joseph Hyland Survey, southern Wharton County, is flowing dry gas through a quarter-inch choke with tubing pressure 1,650 pounds and casing pressure 1,950 pounds from perforations at 4,642-57 feet. Production is from the Miocene sand, cored at 4,638-54 feet. The well is southwest of three deep holes drilled by Pure Oil Co. in the past year, and is south of the Five Corners field in which the same company completed about five wells from approximately the same depth.

Hamman Exploration Co. No. 1 Cleveland, discovery well of the Bay City field, Matagorda County, opened the third producing horizon in the field when it was plugged back to 9,370 feet and completed for a distillate producer through perforated casing at 9,194-9,204 feet. It is flowing through a quarter-inch choke, with tubing pressure 3,200 pounds. It was originally completed through perforations at 9,361½-70 feet, and plugged back and recompleted in the new sand after it started making 100 per cent salt water. The same company's No. 1 J. H. Crocker, 2,400 feet north of the discovery well which opened a shallower sand several weeks ago from perforations at 8,190-94 feet, is flowing at the rate of 413 bbls. of oil per day through various chokes, but is showing about 40 bbls. per day of salt water.

Discovery Well Killed

Commonwealth Oil & Gas Co. No. 3 Bennett, completed last week as a mile north extension to the Heyser field in Calhoun County, has been killed, and preparations are being made to reperforate and test. It was originally completed through perforations at 5,467-70 feet, and flowed at the rate of 8½ bbls. of 33 gravity oil per hour, but began to make distillate after the oil flow was cut off due to a high gas-oil ratio. The perforations were cemented off and the casing will be perforated approximately 1 foot deeper. The completion of this well extends production into Victoria County and is expected to result in an active drilling campaign, as that area is divided into many ownerships. Location for No. 4 Bennett has been made 500 feet northeast of No. 3 in the J. Galban Survey.

In the south extension of the Cotton Lake field, Chambers County, Salt Dome Oil Co. No. 1-D Lawrence, 932 feet west of No. 1-C Lawrence, is preparing to make a second drill stem test at 6,509-19 feet, total depth. The first test was unsuccessful, due to the testing tool slipping, which resulted in 150 feet of drilling mud, with no show of oil or gas. An electrical logging device run to the total depth showed sand at 6,514-17 feet, with no resistivity and 40 millivolts porosity, and sand from 6,466-74 feet showed 40 ohms resistivity and 80 millivolts porosity. The Marginulina was topped at 6,224 feet, a few feet lower than No. 1-C, recently completed for the best well in the field.

In the Gillock area of the Dickinson field, Galveston County, Stanolind Oil & Gas Co. was drilling plug preparatory to testing No. 1 Dameani, bottomed at 8,780 feet with 7-inch casing cemented at 8,712 feet. It is located in the W. K. Wilson Survey north of the Houston-Galveston Electric Railway right of way. North of this well 1,100 feet location has been made for No. 2 Dameani, while adjoining this lease, Humble Oil & Refining Co. has derrick up for No. 1 Kilgore. To the north and 1 mile northwest of the field proper, Bennett-Kenyon Oil Co. (Diadem Oil Corp. of Texas) tested salt water, with no pressure, on a drill stem test at 8,056-62 feet and screen and liner are being pulled preparatory to plugging back. This well is a west offset to No. 1 Way, a good producer, and tentatively establishes the water level for the area.

Republic Production Co. and Houston Oil Co. No. 11 Brooks, 933 feet west of No. 8 Brooks, Silsbee field, Hardin County, is shut down awaiting orders. It tested salt water the second time after plugging back from 6,964 feet to 6,953 feet. The test was made at 6,935-53 feet and showed 12 stands of oily salt water. Same companies' No. 10 Brooks, 933 feet east of No. 6 Brooks, flowed 134 bbls. of pipe line oil in 14 hours through a quarter-inch choke with tubing pressure 475 pounds. The hole is bottomed at 6,958 feet with 7-inch casing cemented at 6,953 feet.

Interesting Test in Clinton Field

Much interest is centered on the Clinton field, Harris County, as Stanolind Oil & Gas Co. attempts to test No. 1 D. A. Oates, 4,150 feet south of the discovery well. The hole is bottomed at 8,783 feet, and the operators have been unable to pull the drill stem due to excessive gas pressure. A section from 8,055 feet to the total depth has been drilled and cored, but the recovery has been poor, due to the operator having to circulate several hours before pulling each core. It is planned to run blank liner from 8,000 feet to the total depth and test. Very little is known about the producing formation in this field due to the excessive pressure.

Texas Co. No. 1 T. N. Mauritz, the discovery well of the Ganado structure, southeastern Jackson County, flowed at the rate of 72 bbls. of oil per day through a quarter-inch choke, with tubing pressure 1,675 pounds and casing pressure 1,550 pounds. The well is making an estimated 2,315,000 feet of gas per day, with the gas-oil ratio 33,200 to 1. Production is from a screen setting made from 5,080 to 5,111 feet, total depth.

In the West Beaumont field, northern Jefferson County, Glenn H. McCarthy No. 4 Longe cored a good section of oil sand at 5,361-80 feet, the total depth, and 7⅝-inch casing has been cemented at 5,359 feet. To the south in the Amelia field, Humble Oil & Refining Co. No. 4 Tyrell-Combest, an outpost test in the A. Savery Survey, flowed 415 bbls. per day through a quarter-inch choke through perforations at 6,775-78 feet. Same company's No. 2 M. L. Lefler flowed 25 bbls. per hour through a quarter-inch choke from a total depth of 6,780 feet. Location for five more wells were made by Humble. They are No. 1-A J. A. Deshenan, No. 1-B Deshenan in Block E, No. 1-D E. W. Ephlin, Block A, No. 1 Dooley, Block C and No. 2 Crook, all in the C. Williams Survey.

Walter Greenfield, general superintendent of Signal Oil & Gas Co. (left), and Harry A. Godda, petroleum engineer for same company (right) at Signal's deep wildcat test east of the Ten Section field in California

Palacious Discovery Completed

Glenn H. McCarthy No. 1 Foley, the discovery well of the Palacios field, Matagorda County, has been officially completed for an initial production of 175 bbls. of fluid per day through a three-sixteenths inch choke with tubing pressure 2,750 pounds and casing pressure 3,000 pounds. The fluid tested 28 per cent 53 gravity distillate and brackish water. The rig is being moved over for No. 2 Foley Land Co. in section 19 of the Lewis Goodwin Survey.

Two more tests have reached the sand at the Segno field, southern Polk County, and are scheduled to be completed during the week; J. K. Dorrance No. 3 Wing cored a section of sand and shale showing oil to 5,187 feet, the total depth, and 7-inch casing is being cemented. It is midway between Nos. 1 and 2 in the I.&G.N. Survey No. 15. Gulf Oil Corp. No. 1 Wing topped the Cockfield at 5,125-30 feet and cored to 5,193 feet, where an eight-minute drill stem test at 5,173-93 feet showed 65 pounds of pressure and 1,400 feet of pipe line oil. Seven-inch casing is being cemented. One-half mile east of production Humble Oil & Refining Co. No. 1 Kirby Lumber Co. has pulled screen after testing salt water in the Upper Cockfield and is drilling below 5,324 feet in search of the Conroe pay, the second sand of the Cockfield section. Since this sand is encountered in most cases at approximately 250 feet below the top of the Cockfield, and no further showings have been encountered since deepening from 5,202 feet, it is doubtful if a lower sand will be found. All wells in the field are producing from the Upper Cockfield section below 5,100 feet.

At the Aldine Prospect, Harris County, Texas Gulf Producing Co. No. 1 Gillespie and Garnsey which was swabbed dry last week after showing oil and gas through perforations at 7,097-7,100 feet, set a cement retainer at 7,084 feet and is running tubing to test after perforations were made in the casing at 7,078-82 feet and at 7,040-43 feet. Location is in the Simon Contreras Survey. To the northwest on the Ogburn Prospect, H. M. Harrell and others No. 1 F. N. Bullock is coring below 6,600 feet with no shows reported after topping the Cockfield at 6,299-6,301 feet. Location is in the Charles Bowman Survey.

On the Cheek Prospect, Jefferson County, Humble Oil & Refining Co. No. 1 Jefferson Land Co., Hillbrandt Survey, was plugged back to 7,835 feet and the casing perforated at 7,827-34 feet. After running screen and liner the well was swabbed in and began to flow wash water, with no oil, through a quarter-inch choke, with tubing pressure 800 pounds. It was shut in after it had flowed for one hour to let the pressure build up. The well has been in the process of completion for the past few weeks and has shown considerable gas along with salt water on several tests from 7,835 to 8,459 feet, the total depth.

There were five wildcat locations reported in the district. In Matagorda County Royal Oil & Gas Corp. No. 1 T. J. Ewing is in the P. Burnett and A. S. Sojouner Survey. Cockburn Oil Co. is scheduled to move in a rig for No. 1 Henry Foerster in the A. J. Bell Survey, Austin County. Ten miles southeast of Trinity, West Production Co. has derrick up for No. 1 Texas Long Leaf Lumber Co. In the Lakeview area, Wharton County, Smith and McDannald are moving in for No. 1 Hurlbut in the I.&G.N. Survey No. 23, while in the El Camp area, S. G. Harrison and H. E. Williams have made location for No. 1 H. and G. H. Harfst in the Lyman Conisrite Survey.

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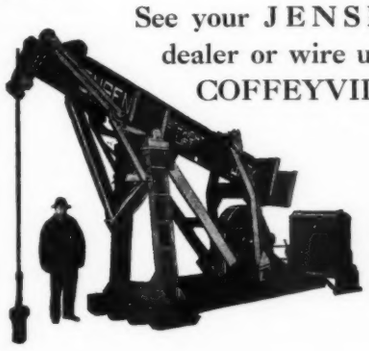

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Louisiana Gulf Coast

With the exception of a continuation of activity around the west flank of the old Jennings field in Acadia Parish, development along the Louisiana Coast was quiet. Following the completion of A. C. Glassell and others No. 1 J. Trusell, on the west flank of the Jennings field, Acadia Parish, which flowed 418 bbls. per day through a 12/64-inch choke from a total depth of 7,021 feet, three more locations were announced. Superior Oil Producing Co. is moving in material for No. 2 Iowa-Jennings in section 41 and No. 4 Lecklet in section 42-9s-2w. Alfred Glassell No. 1 R. McFarlan is being rigged up in section 42. Superior Oil Producing Co. No. 2 Lecklet in section 42 which topped the salt at 7,600 feet and has been plugged back to 6,877 feet and the well is flowing into the pits after perforations were made in the casing at 5,780-90 feet.

10,000-Foot Oil Showing

Another 10,000-foot producer for the Lafitte field in Jefferson Parish is apparently in the making as Texas Co. is running an electrical logging device after coring oil sand from 9,999-10,047 feet, the total depth. Casing will probably be run to the top of the sand which will make the third 10,000-foot producer for the field. Location for No. 2 R. C. Milling was made, being located 4,974 feet north and 1,270 feet east of the SW cor. section 20-17s-24e.

In the Valentine field, Pan American Production Co. No. 4 Harang is coring in water sand below 6,745 feet after a drill stem test at 5,405-32 feet showed 13 stands of 32 gravity oil. Same company's No. 3 Harang is trying to recover stuck drill stem at a total depth of 7,718 feet.

On the South Crowley Prospect, Acadia Parish, Humble Oil & Refining Co. No. 1 Nordyke in section 23-10s-1e has been abandoned at 10,052 feet after the drill pipe became stuck at that depth.

One of the most interesting wildcats in the district is D. D. Oil Co. No. 1 Lutcher-Moore, North Starks Prospect, in Calcasieu Parish. After cleaning up a fishing job at 8,398 feet, caused by the well attempting to blow out after topping the Cockfield section, the hole was cored to a depth of 8,447 feet where the drill stem became stuck again and the operators are now fishing. Location is in section 1-8s-13w.

Continental Oil Co. No. 1 Pardee Lumber Co., section 18-4s-1w, Evangeline Parish, is drilling in shale below 7,130 feet. The Discorbis was topped at 4,886 feet, Eponides at 4,916 feet and the Heterostegina at 4,990 feet.

Shell Petroleum Corp. No. 1 Joe Sturdivant, section 25-10s-4w, the discovery well of the South Roanoke field, Jefferson Davis Parish, completed last week as a large gas well through perforated casing at 8,540-50 feet, was plugged back and tested through perforations at 8,485-8,505 feet and showed salt water with no show of oil. The perforations have been cemented off, and it is waiting for cement to set.

At the Marchland salt dome, Lafourche Parish, William Helis is preparing to make a production test of No. 1 City of New Orleans after sand showing oil was cored at 7,333-36 feet, in a sidetracked hole. The original hole was drilled to 8,012 feet, after it proved the structure a salt dome, topping salt at 7,463 feet. Location is 10 miles south of the Leesville field, and in section 19-23s-23e.

On the Venice dome, Plaquemines Parish, Tide Water Associated Oil Co. has made location for No. 3 Manhattan Fruit Co., 460 feet east of No. 2, and in section 26-21s-30e.

The progress of two 11,000-foot wildcats is being watched with interest. In St. Mary Parish on the Wax Lake Prospect, Texas Co. No. 1 Bayou Sale in section 40-17s-9e, is drilling in shale and lime below 11,427 feet with no shows reported, while north of the Houma gas field in Terrebonne Parish, Humble Oil & Refining Co. No. 1 H. J. Ellender in section 23-19s-19e, is drilling below 11,852 feet.

On the west side of the Vinton field, Calcasieu Parish, Woodley Petroleum Co. and others are rigging up for No. 1 Gray, an outpost test located 1 mile from production in section 32-10s-12w.

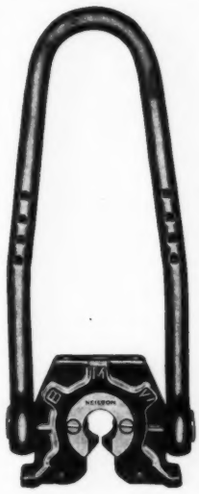
Michigan Fields

(Continued from Page 80)

for oil in section 32, New Haven Township, Gratiot County, though the state permit had not yet been issued.

Two new Berea gas tests being started in Ravenna Township, Muskegon County, were the No. 1 Baker and

The strength of this



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others, C NE section 6-9n-14w, and the No. 1 Wunch and others, C SE section 4, same township.

Dry Holes

In New Haven Township, Gratiot County field, W. E. Ross finished No. 2 Akin, C NE NE section 9-10n-4w, as a failure at 1,005 feet. The Stray sands were topped at 983 feet and the hole cased at 995 feet.

The lone unsuccessful wildcat test reported last week was the Darke Brothers No. 1 Truesdell, SW SW SW section 25-2s-8e, Canton Township, Wayne County, which topped the Trenton limestone at 3,240 feet and was drilled to 3,600 feet. It was to be abandoned.

East Texas Fields

(Continued from Page 95)

30 minutes. General American Oil Co. No. 20-B Williams, 3,613-30 feet, 35 bbls. per hour; No. 27-B Williams, 3,631-42 feet, 25 bbls. per hour.

Rusk County

Atlantic Refining Co. No. 13 Griffin, 3,590-3,635 feet, 30 bbls. per hour. Cook Drilling Co. No. 3-B Alford, 3,647-74 feet, 21 bbls. in 45 minutes. Davis & Hart No. 5-B Perry, 3,639-45 feet, 20 bbls. in 25 minutes through one-quarter inch choke. General American Oil Co. No. 2 Maxwell, 3,744-3,815 feet, 50 bbls. per hour. Humble Oil & Refining Co. No. 63-A Kangerga, 3,630-65 feet, 75 bbls. per hour; No. 14 Kee, 3,718-28 feet, 60 bbls. per hour. R. C. Langley No. 1 Alford, 3,620-54 feet, 50 bbls. per hour. Marr Drilling Co. No. 5 Lacy, 3,657-58 feet, 10 bbls. in 30 minutes.

Upshur County

A. L. Baggett No. 2 Owens, 3,750 feet, 100 bbls. in four hours. Lester & Duffield No. 4 Jones, 3,728-29 feet. 30 bbls. per hour. Magnolia Petroleum Co. No. 27 Hampton, 3,675-95 feet, 80 bbls. per hour. Margay Oil Co. No. 12 Victory, 3,573-92 feet, 32 bbls. in 40 minutes. Sun Oil Co., No. 19 Hargraves, 3,719-23 feet, 15 bbls. per hour. Vierson Oil Co. No. 7 Victory, 3,550-92 feet, 55 bbls. per hour.

EAST CENTRAL TEXAS COMPLETIONS

Falls County

A. H. Bell and others No. 1 C. T. Trice, 1,219-20 feet. 30 bbls. per day on pump, 1 mile east of Lott.

Franklin County

Humble Oil & Refining Co. No. 1 Reed, 4,260 feet, 84 bbls. per day on pump; No. 1 R. Wims Estate, 4,340 feet, 367 bbls. on pump. Magnolia Petroleum Co. No. 3 Maxton, 4,299 feet, 85 bbls. on pump.

Grayson County

Rapp Drilling Co. No. 1 J. R. Singletary, 3,880 feet, pumped 25 bbls. in 24 hours, 26 gravity oil, and 10 bbls. water, at Collinsville. O. T. Clark No. 1 J. C. Muder, dry and abandoned, 6 miles north of Sadler, elevation 722 feet.

Henderson County

Cortex Petroleum Co. No. 1 A. W. Petiette, 4,070-94 feet, 150 bbls. in 24 hours through one-eighth inch choke. Roeser & Pendleton, Inc., No. 3 Wathen, 4,104 feet, 168 bbls. in 24 hours.

Hopkins County

Hager and others No. 1 S. Pierce, 4,458-4,517 feet, 582 bbls. in 24 hours through one-quarter inch choke. Shell Petroleum Corp. No. 2 J. T. Reynolds, 4,528 feet, 623 bbls. in 24 hours through one-quarter inch choke.

Titus County

Byrd-Frost, Inc., No. 2 Harper, 410 bbls. in 24 hours on pump. Housh and others No. 3 Hargrove, 4,337 feet, 410 bbls. on pump. Humble Oil & Refining Co. No. 3 Fry, 4,325 feet, 198 bbls. on pump. R. E. Moore No. 2 W. T. Edwards, 4,290 feet, 160 bbls. in six hours on swab.

A. H. Witt, drilling contractor and oil producer, was sitting on the running board of his car at Russell, Kans., when this "snap" was taken

New York-Pennsylvania Gas Fields

COUDERSPORT, Pa., Apr. 19.—One completion and two new locations are included on the report of drilling operations in the New York-Pennsylvania deep sand gas fields for the week ended April 17. All were in Pennsylvania.

Potter Development Co. completed its well on the L. C. English farm, Harrison Township, Potter County, at a total depth of 5,110 feet. It gauged 11,000,000 feet of gas daily with an initial rock pressure of 1,870 pounds. The top of the Oriskany sand was found at 5,100 feet.

The same company is moving in on the Ida Scoville farm, Harrison Township, Potter County, one of the new locations. It is located 200 feet from the south road and 250 feet from the east line of the farm.

New York State Natural Gas Co. reported the second new location, 1,153 feet from the north line and 595 feet from the west line of the L. J. Roberts farm in Clymer Township, Tioga County.

Pennsylvania Operations

The Potter Development Co. is fishing at 5,230 feet on the Crawford Estate farm, Keating Township, one of the four current Potter County operations. The same company is spudding in on the May C. Haupt farm, West Branch Township.

Godfrey L. Cabot, Inc., is shut down at 5,006 feet on the R. E. Courtwright farm, Harrison Township, preparatory to drilling in. The drill topped the Oriskany sand at 5,002 feet and found the first gas, 319,000 feet per day, at 5,005 feet. Ward Wasson Co. remains shut down at 5,310 feet on the W. B. Hall farm, Genesee Township.

In Warren County, Updegraff continues shut down on the C. E. Erickson farm location, Elk Township, waiting for equipment, and Kent Kane and others are moving in on Lot 515, Watson Township.

Potter Development Co.'s test on the C. G. Dearman farm, Middlebury Township, Tioga County, found salt water in the Oriskany at 4,416 feet and is shut down at 4,418 feet. This test found the Oriskany at 4,415 feet and the Tully at 4,385 feet. The company's second Tioga County test on the H. C. Kemp farm in Farmington Township, is drilling at 3,668 feet. It topped the lime at 3,640 feet. G. L. Cabot, Inc., is drilling at 2,005 feet on the Union Joint Stock Land Bank property, Brookfield Township, Tioga County.

New York Operations

With three tests drilling and a new location, Steuben County is the scene of the most activity in New York.

Atwater and others are drilling at 2,450 feet on the Herrington farm, Woodhull Township. The elevation of this test is 1,546 feet. G. L. Cabot, Inc., is drilling at 3,521 feet on the T. H. Wing farm, Greenwood Township, after topping the Tully at 3,486 feet, and Sylvania Corp. is drilling at 3,125 feet on the William Hendrickson farm, Troupsburg Township, Belmont Quadrangle Drilling Co. is moving in on the Clara Lynch farm, Hartville Township. This test is located 286 feet from the north line and 204 feet from the east line of the farm and is in section B of the Greenwood quadrangle.

Kaufman and others are still shut down on the Bank Angelica farm, Allen Township, Allegany County, at 3,387 feet, in a test which passed through a 3-foot show of Oriskany without gas production. Also in this county, the Empire Gas & Fuel Co. is drilling at 4,251 feet on the K. Mulvey farm, Alma Township. This well, the elevation of which is 1,999 feet, passed through the Tully lime at 4,074-4,127 feet.

Two tests are drilling in Cattaraugus County, the Cunningham Natural Gas Co. at 2,910 feet on the H. Hotchkiss farm, Randolph Township, and the Belmont Quadrangle Drilling Co. at 500 feet on the A. G. Hoffler farm, Leon Township.

California Field Report

By L. P. STOCKMAN

WILMINGTON AND LAKE VIEW RESPONSIBLE FOR INCREASE

LOS ANGELES, Calif., Apr. 19.—Crude oil production in California, if the present rate is maintained for another week, will average around 615,000 bbls. per day for the month of April as the state's output averaged a little better than 621,000 bbls. per day during the first two weeks of the current month.

The Wilmington field of Los Angeles Basin and the Lake View section of the Midway-Sunset field of Kern County are the greatest contributors to the present excess production as each is producing about 8,000 bbls. per day above its quota. Santa Maria Valley field will go on commercial production for the first time within another few weeks if construction crews succeed in completing Union Oil Co.'s new 8-inch pipe line and other necessary facilities on schedule.

El Segundo

In the El Segundo field in the Los Angeles Basin, Standard Oil Co. has rig up for an outpost on its El Segundo refinery property. The site was selected following completion last month of the Texas Co.'s No. 1 Security, which is still flowing 2,819 bbls. of clean 26.8 gravity oil and 1,790,000 feet of gas daily. No. 1 Refinery of the Standard Oil Co. is across Sepulveda Boulevard about 1,500 feet northwest of the Texas Co. No. 1 Security. Union Oil Co. leased a part of the Pacific Electric Railway Co.'s 300-foot right of way which extends southwesterly through the El Segundo field. Union leased only that part running through its Security lease in the extreme southern part of the field. The remainder of the right of way extends across acreage of Republic Petroleum Corp., Richfield Oil Corp., and the Texas Co. This was the last unleased property in the El Segundo field as Richfield Oil Corp. a short time ago leased the station property of the Santa Fe Railroad and immediately started drilling operations.

Wasco

Continental Oil Co.'s Wasco wildcat will be given an exhaustive test within the next few days. Drill pipe stuck in this test several weeks ago and the company, unable to recover the string, decided to use it as a water string. The drill pipe, with bottom at 9,545 feet, was cemented at 9,303 feet. To work through this string specially made small tools had to be used, and considerable care exercised during the course of work. The hole is bottomed at 9,591 feet, 46 feet having been made through the drill pipe, and the company has run in 309 feet of 2⅜-inch liner carrying 88 feet of perforated preliminary to making a production test. This is the smallest liner ever used in a deep California well, and while the company is battling against great odds due to mechanical trouble it may succeed in getting the well to flow. This wildcat has such a high gas pressure that the company was able to drill only with the greatest effort and yet it does not seem to have the kick necessary to result in a sustained flow. During its periodic heading the well has produced a small quantity of 28 gravity oil. While this wildcat may not prove to be a substantial producer Continental Oil Co. appears to have discovered a new oil field. Seaboard Oil Corp.'s wildcat in section 26-27-24, southeast of Continental's Wasco wildcat, is not yet deep enough to permit correlation work.

TANKER SHIPMENTS FROM LOS ANGELES TO DOMESTIC AND FOREIGN PORTS

	April 8		April 1			
Intercoastal-domestic—	Total this week	Daily average	Total last week	Daily average	This year to date	Same time last year
Diesel and gas oil	.....	.....	.....	.....	176,726	151,541
Gasoline	116,870	16,696	116,691	16,670	519,573	1,650,119
Kerosene	.....	.....	.....	.....	.....	385,956
Foreign exports:						
Crude oil	390,452	55,773	314,405	44,915	3,572,861	2,473,409
Fuel oil	98,904	14,129	510,616	72,945	3,652,473	2,635,294
Diesel and gas oil	5,870	839	219,739	31,391	1,831,379	1,243,775
Gasoline	204,868	29,267	85,640	12,234	1,995,990	1,522,556
Kerosene	74,596	10,657	.....	.....	708,452	166,314
Other unfinished oil	.....	.....	.....	.....	179,265	6,439
Coastwise-domestic:						
Crude oil	220,695	31,528	64,918	9,274	1,719,828	1,693,594
Fuel oil	367,825	52,546	414,276	59,182	4,155,701	2,466,188
Diesel and gas oil	78,391	11,199	36,162	5,166	642,572	429,736
Gasoline	356,386	50,912	200,648	28,664	3,270,886	3,521,046
Kerosene	19,842	2,835	.....	.....	51,840	70,902

TANKER SHIPMENTS FROM SAN FRANCISCO TO DOMESTIC AND FOREIGN PORTS

Intercoastal-domestic:						
Diesel and gas oil	.....	.....	.....	.....	152,932	.....
Gasoline	.....	.....	.....	.....	25,778	.....
Lubricants	.....	.....	.....	.....	.....	7,608
Foreign exports:						
Crude oil	.....	.....	.....	.....	829,591	628,909
Fuel oil	19,721	2,817	42,384	6,055	419,082	1,079,216
Diesel and gas oil	.....	.....	61,930	8,847	872,103	144,693
Gasoline	.....	.....	138,031	19,719	1,466,427	717,192
Kerosene	.....	.....	17,649	2,521	252,035	163,707
Lubricants	.....	.....	71,474	10,211	234,631	73,788
Coastwise-domestic:						
Fuel oil	92,689	13,241	127,619	18,231	1,777,580	2,096,154
Diesel and gas oil	14,940	2,134	21,685	3,098	158,656	161,072
Gasoline	.....	.....	41,940	5,991	1,209,923	1,198,158
Kerosene	.....	.....	19,831	2,833	41,340	44,692

Rosecrans

In the Rosecrans field, where Barnsdall Oil Co. recently discovered a deep virgin zone, operators are making plans for an aggressive drilling campaign and within 30 days several additional wells will be under way. Following completion of No. 10 O'Dea, which is flowing 704 bbls. of exceptionally clean 36.1 gravity oil and 2,350,000 feet of gas per day, Barnsdall is deepening No. 12 O'Dea to the deep zone. Union Oil Co. spudded in No. 16 Rosecrans, a new well scheduled for completion in the deep O'Dea zone and it may be ready for a production test by June 1.

Barnsdall Oil Co. has a decided edge in the Rosecrans field as it has several upper zone producers with holes large enough to permit deepening. Universal Consolidated Oil Co. has filed notice with the Mining Bureau indicating its intention to drill a new well in this field and an early spud is anticipated. Exeter Oil Co. has concluded a deal involving development of its Wanka and Higgins leases in the Rosecrans field whereby the company does not stand any of the drilling cost and splits any resulting production on a fifty-fifty basis. Exeter's refinery is only a few miles from the field. Republic Petroleum Corp. recently quitclaimed all but 2½ acres of the Trust lease in the western end of the Rosecrans field and this lease has been acquired by Universal Consolidated Oil Co.

Dominguez

Union Oil Co. completed two wells in the Dominguez field during the week but this was overshadowed by work undertaken on No. 50 Callender, which tends to indicate that the company has discovered a new deep virgin zone. No. 50 Callender is bottomed at 10,435 feet and the company is reaming preparatory to landing a string of casing to test out a possible productive horizon logged above this depth. Eight zones have been found productive in the Dominguez field, the last three being of Miocene age. If the ninth zone is found highly productive it will lead to still deeper drilling and thus the Union or Shell may ultimately acquire the state's record for depth. Union and Shell control all but a very small part of the productive acreage in the Dominguez field and while both would like to hold back production for another year or so they find themselves unable to do so because of lease obligations.

Union Oil Co.'s two new completions in the Dominguez field were No. 53 Callender and No. 9 Carson, both of which were completed in the Eighth Callender zone. The former was brought in flowing 2,168 bbls. of clean 35.7 gravity oil and 4,000,000 feet of gas per day from 7,550 feet. No. 9 Carson flowed 468 bbls. of very clean 29.9 gravity oil and 1,750,000 feet of gas per day from 7,555 feet after the hole had been finished with an 8⅝-inch water string landed at 7,190 feet and a 5¾-inch liner carrying 335 feet of perforated. Shell Oil Co. has two wells rotating ahead in oil sand in this field. No. 89 Reyes is making hole at 7,185 feet and No. 90 Reyes is drilling ahead at 8,672 feet.

Wilmington

The parade of completions which started in the Wilmington field of Los Angeles Basin a month or so ago continued during the current week. General Petroleum Corp. completed its first well on the Ford Motor Co.'s property and should have four more wells on production within a fortnight. No. 2 Ford was brought in flowing 2,145 bbls. of clean 21.7 gravity oil per day from 3,590 feet after the hole had been finished with an 8⅝-inch combination string including 447 feet of perforated. Union Pacific Railroad Co. completed its No. 3 and should have three more tanking oil within a few weeks. No. 3 Union Pacific was brought in flowing 787 bbls. of relatively clean 19.8 gravity oil per day from 3,537 feet after the hole had been finished with an 8⅝-inch combination string, carrying 349 feet of 60 mesh. Union Pacific Railroad Co.'s drilling and production department under direction of Vice President William Reinhardt has three producing wells, four drilling wells and 17 locations on which are either completed rigs or piles to form the base for derricks. Present plans call for a substantial increase in the scope of work by this company.

Ring Oil Co. No. 1-W in the Wilmington field was brought in flowing 387 bbls. of relatively clean 18.9 gravity oil per day from 3,725 feet after the hole had been finished with a 6⅝-inch combination string carrying 270 feet of 80 mesh. Initial daily production in the Wilmington field does not always reflect a well's maximum production, as operators have adopted the practice of bringing in wells under wraps and subsequently opening them up, as this prevents the well from sanding up.

George F. Getty, Inc., completed No. 5 Wilmington flowing 490 bbls. of clean 19.6 gravity oil per day from 3,585 feet. This company's No. 6 Wilmington, completed about two weeks ago, has shown a consistent increase in flow and is at present doing 1,621 bbls. per day. Pacific Electric Railway Co. has leased its right of way property extending southwest from Anaheim Boulevard through the heart of the producing area in the Wilmington field to Royalty Service Corp., and the latter is committed to start immediate drilling. This lease comprises about 20 acres and will sustain several wells.

Gato Ridge

Two excellent wells were completed in the Gato Ridge field of Santa Barbara County during the past week, and another, Barnsdall Oil Co. No. 8 Tognazzini, should be passed for production within the next 10 days. Petrol Corp. No. 3-A Tognazzini headed the completion list as it was good for 2,580 bbls. per day on the beam following completion at 2,726 feet. This new well was finished with a 10¾-inch water string landed at 1,787 feet and an 8⅝-inch liner, including 648 feet of 400-mesh, perforated. Petrol Corp. is putting the finishing touches on the rig for No. 541 Magenheimer in section 9-8-32 and an early spud is expected. Barnsdall Oil Co. completed No. 6 Tognazzini a few days ago and this new well was brought in pumping 1,560 bbls. of 18.7 gravity oil per day from 2,515 feet. The Gato Ridge field has no pipe line

facilities but Union Oil Co.'s pipe line could reach it with a short extension.

Midway-Sunset

Standard Oil Co. headed the completion list in the Midway-Sunset field of Kern County as its No. 123-33-D in section 33-32-34 was brought in pumping 934 bbls. of 22.9 gravity oil and 15 bbls. of water per day from 3,140 feet. It was finished with a 7-inch liner carr ing 198 feet of 60-mesh perforations. The company is making preparations to start three new wells on this property, one of which, No. 124-33-D, should be making hole this week. Merrit Annex Oil Co. finished its No. 4 Fried in section 25-12-24 pumping 451 bbls. of 2.9 gravity oil per day from 3,003 feet, but the well sanded up and is being cleaned out. No. 1 Evans of Holly Development Co. in section 15-32-23 was a rather small well as it was good for only 89 bbls. of 21.8 gravity oil daily from 2,326 feet. The hole was finished with an 8⅝-inch water string landed at 2,170 feet and a 6⅝-inch liner including 125 feet of perforated.

Kern River

In the Premier section of the Kern River field Standard Oil Co. completed No. 5-9 in section 9-28-27, pumping 111 bbls. of 13.8 gravity oil and 84 bbls. of water per day from 2,810 feet. Several new wells are being started in the Premier district and Dougan Oil Co. No. 2 Newhouse should be the next completion listed. Out on the West Front of the Kern River field Tide Water Associated Oil Co. completed No. 42 in section 23-38-27, pumping 52 bbls. of 14.1 gravity oil per day from 2,200 feet. The Republic Petroleum Corp. resumed drilling operations in the Kern Front area and is drilling ahead in No. 12 Strassburger in section 24-38-27 at 1,501 feet. The company is building rig for No. 15 Strassburger and has a rig up for No. 1 Cal. Tech in section 24-38-27.

Ventura County

In the Shiells Canyon district of Ventura County the Texas Co. completed No. 132 Shiells in section 4-3-19, flowing 290 bbls. of relatively clean 37.6 gravity oil and 120,000 feet of gas per day from the shallow sand at 3,097 feet, plugged back from 3,124 feet. In the Rincon field of Ventura County General Petroleum recompleted No. 3-A Hobson after redrilling and deepening the hole to 4,510 feet. It is pumping 15 bbls. of 26.1 gravity oil and 60 bbls. of water daily. Chanslor Canfield Midway Oil Co. No. 13-B shows unusual promise at 4,165 feet and may prove good for 250 bbls. per day upon completion.

In the San Miguelito field, Continental Oil Co. is just about ready to spud in No. 7 Grubb while up in the Padre Canyon field the company is drilling ahead in No. 3 Hobson at 3,400 feet. In the latter field Chanslor Canfield Midway Oil Co. is drilling ahead in No. 5-A Hobson and is redrilling No. 2 Oakgrove.

Mountain View-Round Mountain

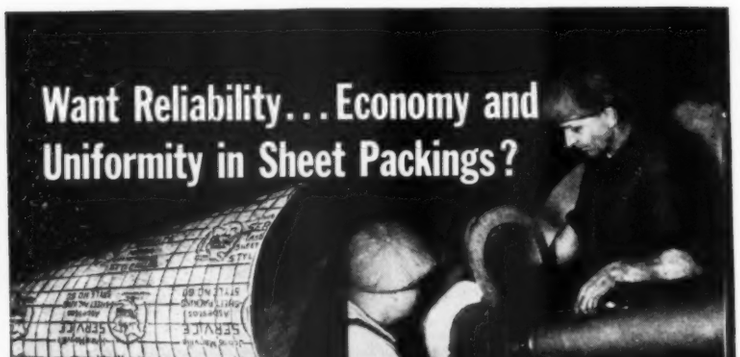
In the Mountain View field of Kern County Hogan Petroleum Co. completed No. 8 Wharton in section 32-30-29, flowing 584 bbls. of exceptionally clean 31.8 gravity oil and 1,200,000 feet of gas per day from 5,866 feet. The hole was finished with a 6⅝-inch liner carrying perforations at 5,525-70 feet, 5,565-5,690 feet, 5,715-30 feet and at 5,785-5,840 feet. The next completion is expected to be Mohawk Petroleum Co. No. 9 Clendennen, standing cemented on top of the pay at 5,575 feet. Bottom of the hole is 5,998 feet. Trico Oil & Gas Co. abandoned No. 2 Wilson as a duster, in gray sand at 5,047 feet.

In the Round Mountain field Honolulu Oil Corp. completed No. 25 in section 18-28-29, pumping 196 bbls. of 15.4 gravity oil daily from 2,223 feet. No. 24 on this lease should be tanking oil this week as it was in the pay at 2,023 feet.

Richfield-Torrance

In the Torrance field of Los Angeles Basin Doherty Oil Co. completed No. 1 Redondo, pumping 122 bbls. of 17.8 gravity oil per day from 3,663 feet after the hole had been finished with an 8⅝-inch liner including 368 feet of 100-mesh perforations. Weber-Butler Oil Co. No. 1 Gilman was deepened to 4,515 feet but the well was good for only 179 bbls. of 24.3 gravity oil cutting 50 per cent. This hole was finished with a 4¾-inch liner carrying 700 feet of 80-mesh perforated. In the Richfield district Union Oil Co. com-

(Continued on Page 114)



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CALIFORNIA FIELD OPERATIONS, FEBRUARY, 1937

According to figures collected by the American Petroleum Institute, the total production of crude oil in California for February amounted to 16,515,433 bbls., an average of 589,837 bbls. per day. This is an increase of 8,171 bbls. per day over January production.

CRUDE PETROLEUM PRODUCTION

(Figures of production and stocks are in barrels of 42 gallons)

	Total production February	Daily average February 1937	Daily average January 1937	Daily average February 1936
Group 1:				
Belridge—North	417,000	14,897	15,121	8,434
Belridge—South	51,666	1,845	1,894	2,114
Coalinga	421,112	15,040	16,183	18,209
Edison	136,581	4,878	4,993	5,153
Elk Hills	247,180	8,828	8,486	8,853
Fruitvale	249,880	8,924	8,485	6,854
Greeley	12,460	445	448	....
Kern River	426,623	15,237	15,056	14,405
Kettleman Middle Dome	5,161	184	206	430
Kettleman North Dome	2,173,144	77,612	77,470	79,875
Lost Hills	109,776	3,922	3,837	4,081
McKittrick	46,968	1,677	1,586	3,626
Midway-Sunset	1,900,035	67,858	65,762	53,599
Mountain View	591,497	21,125	21,482	31,697
Mount Poso	498,271	17,795	17,980	18,838
Round Mountain	320,152	11,434	11,815	9,061
Ten Section	32,555	1,163	1,015	....
Wheeler Ridge	9,334	333	325	358
Group 2:				
Capitan	45,208	1,614	1,836	1,390
Elwood	262,297	9,368	9,705	12,700
Rincon	70,240	2,508	2,105	1,860
San Miguelito	73,074	2,610	2,209	1,031
Santa Barbara	28,018	1,001	752	1,681
Santa Maria	154,278	5,510	4,766	3,565
Summerland	1,083	38	37	30
Ventura Avenue	934,966	33,392	33,885	33,981
Ventura-Newhall	135,231	4,830	4,955	4,061
Watsonville	1,680	60	60	60
Group 3:				
Brea-Olinda	225,912	8,068	8,171	7,505
Coyote—East	90,651	3,238	3,051	2,317
Coyote—West	208,295	7,439	7,641	8,265
Dominguez	689,684	24,632	24,436	30,889
El Segundo	55,730	1,990	2,130	....
Huntington Beach	1,019,889	36,425	34,933	37,130
Inglewood	375,338	13,405	12,827	12,214
Lawndale	2,542	91	84	251
Long Beach	1,742,705	62,240	62,139	71,321
Los Angeles-Salt Lake	23,303	832	808	795
Montebello	273,934	9,783	8,964	6,951
Playa Del Rey	290,384	10,371	10,308	13,685
Potrero	7,900	282	276	343
Richfield	217,339	7,762	7,343	6,445
Rosecrans	62,250	2,223	2,254	2,074
Santa Fe Springs	1,233,128	44,040	43,588	44,234
Seal Beach	260,746	9,312	9,503	9,469
Torrance	223,193	7,971	8,142	6,631
Whittier	26,460	945	907	963
Wilmington	130,480	4,660	1,707	....
Total February	16,515,433	589,837	581,666	587,428
Total January	18,031,650	587,666	....	....
Increase (*decrease)	*1,516,217	8,171	....	....

Canadian Fields

Completions and Operations in Northwest and in Ontario

By VICTOR LAURISTON

CHATHAM, Ontario, Apr. 17.—An important test was started this week in the Petrolia field in Lambton County, Ontario, when MacIntosh Oil & Gas Co. No. 1 deep test was spudded. The well, which will be carried through the Trenton limestone to an estimated depth of approximately 4,000 feet, will test all the formations underlying the Corniferous limestone from which the Petrolia shallow field derives its production. Location is on the Charles Barrett property in the Bear Creek flats in the east end of Petrolia, within a few hundred feet of the first well drilled in the field.

This is the first deep test in the Petrolia field proper. The field, opened in 1860, has been producing continuously ever since from the Corniferous lime horizon between 450 and 550 feet, and is today the major oil area in eastern Canada. A deep test drilled some 23 years ago in the Oil Springs shallow field, 10 miles to the southeast, encountered gas in the Guelph-Niagara and a small gas production in the Trenton limestone.

Turner Valley Deliveries

Crude and naphtha deliveries from the Turner Valley field in March totaled 133,216 bbls., comprising 80,200 bbls. of crude and 53,016 bbls. of naphtha. The figure was the highest since gas conservation measures were first applied in July, 1931, and is larger than the February total of 115,518 bbls. Deliveries to British American Oil Co. in March included 51,199 bbls. of crude and 4,627 bbls. of naphtha. Imperial Oil Refineries took 4,460 bbls. of clear naphtha, 43,929 bbls. of discolored naphtha and 29,001 bbls. of crude.

The increase in March was largely due to Sterling Pacific No. 4 and West Side Royalties No. 1 completions early in the month. For the week ending April 6, the Sterling Pacific No. 4 averaged 1,045 bbls. a day. It is the largest producer in the field. West Side Royalties No. 1, LSD 5, section 21-18-2w5, has a settled production around 210 bbls. Among the earlier completions, Foundation Petroleums No. 1 is making around 245 bbls. and Turner Valley Royalties No. 1, the first crude producer, is steady at 600 bbls. B. & B. Co. No. 1 is still experimenting with various back pressures, with output averaging up to 700 bbls., though it has fluctuated considerably.

In the west central section, Dalhousie Oil Co. No. 8, LSD 6, section 30-19-2w5, bottoming in the lime at 6,911 feet with a small production, is waiting for a shot. Kermac Petroleums No. 1, LSD 16, section 18-19-2w5, is working on derrick. Mercury Royalties No. 1, LSD 8, section 5-19-2w5, is resuming after cementing 13⅜-inch casing at 2,810 feet. Mercury Oils No. 8, LSD 3, section 4-19-2w5, is below 2,550 feet, carrying 13⅜-inch casing. North American Petroleums' No. 1, LSD 10, section 5-19-2w5, is spudding.

West Side Drilling

On the west flank of South Turner Valley, Royalite Oil Co. No. 5, Sterling-Pacific, LSD 12, section 33-18-2w5, is below 2,450 feet.

In section 32-18-2w5, Royal Crest Petroleums No. 1, LSD 9, is below 177 feet. West Flank Oil Co., sponsored by the Anglo-Canadian Co., is digging cellars for No. 1 in LSD 1 and No. 2 in LSD 8, same section. No. 1 offsets Sterling Pacific No. 3 producer to the west, and No. 2 is north and a little west of Sterling-Pacific No. 4.

In section 28-18-2w5, Richland Royalties No. 1, NE quarter LSD 12, is below 1,652 feet. Richland No. 2, LSD 5, same section, is cleaning and carrying casing below 3,150 feet. Richland No. 3, LSD 14, same section, is below 5,150 feet and apparently in the Home sand, with the Madison expected around 5,700 feet. It will likely be the next completion.

In section 29-19-2w5, Commoil No. 1, LSD 15, is below 960 feet. The company is adopting the innovation, for Turner Valley, of running a narrower hole. For surface casing, 16-inch was used. It is planned to run 12½-inch when the hole is below the top of the Benton shale, about 1,500 feet; run 9⅝-inch to 2,500 feet and drill open hole to the Madison lime where 6⅝-inch will be cemented.

Share Royalties No. 1, N half LSD 8, section 29-18-2w5, is below 660 feet after cementing surface casing at 630 feet. National Petroleum Corp. No. 1, S half same LSD, is waiting for rotary outfit. Globe Royalties No. 1, LSD 7, is below 50 feet after spudding. Davies Petroleums No. 1, LSD 2, is below 460 feet after setting 21-inch surface pipe at 400 feet. Sunburst Oil Co. No. 1, N half LSD 1, same section, is resuming from 300 feet after setting surface casing.

In section 21-18-2w5, Newfold Royalties No. 1, LSD 11, bottoming at 6,245 feet with a small naphtha production, has run tubing to the lime and will be treated with 7,000 gallons of acid. Davies Petroleums No. 2 Royalite, LSD 13, has spudded and is below 183 feet. Renfrew Royalties No. 1, LSD 3, section 28-18-2w5, is erecting stub derrick perparatory to shooting in the lime. It has a small naphtha production.

In section 20-18-2w5, Spy Hill Royalties No. 1, LSD 16, has cellar dug and is letting drilling contract. Brown Oil Crop. No. 2, LSD 8, is below 612 feet after cementing casing at 570 feet. Sunset Oils No. 1, LSD 10, same section, is rigged.

Southwest Extension

In the southwesterly extension of Turner Valley, Prairie Royalties No. 1, LSD 16, section 17-18-2w5, is below 1,771 feet. Brown Oil Corp. No. 1, LSD 14, section 16-18-2w5, is below 504 feet. Firestone Petroleums No. 1, LSD 13, same section, is below 150 feet. Richwell Oil Co. No. 1, LSD 5, is rigged ready to spud.

In the far south, National Petroleum Corp. No. 2, LSD 14, section 9-18-2w5, is

(Continued on Page 114)

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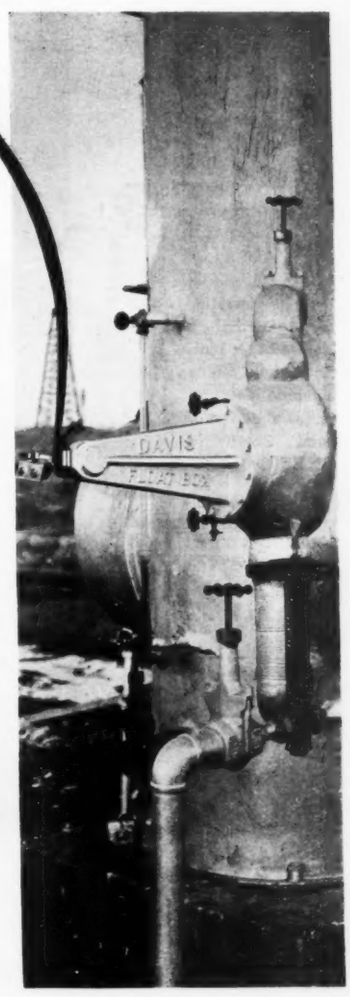

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Central West

Operations in Central Ohio, Kentucky, Illinois, Indiana

By GEORGE A. WHITNEY

FINDLAY, Ohio, Apr. 19.—The most important development in the Central West fields in the past week was the showing of oil made in a wildcat test in section 36-5n-7e, Harrison Township, Henry County, in northwestern Ohio. This test, which is being drilled by N. L. Stevens, on the Nagel farm, topped the Trenton sand at 1,694 feet, and at 1,728 feet the hole filled 125 feet with oil, at 1,740 feet there was 360 feet of oil in the hole. The well was shot with 100 quarts and caved from the shot at 1,710 feet. The well is now being cleaned out at the latter depth with 325 feet of oil in the hole above the cave. This test, which is the first to show oil in this township, also made 300,000 feet of gas at 1,713 feet.

Stevens plans to drill nine or 10 more tests in this section. He has over 1,400 acres under lease.

INDIANA FIELD

In Daviess County, Indiana, section 34-3n-5w, Barr Township, Parker & Loyd's test on the Charles Graves farm was dry and abandoned at 600 feet. In Reeves Township, section 13-2n-6w, Midwest Development Corp. test on the W. R. Meredith property was a failure at 790 feet.

In Knox County, section 14-5n-10w, Busseron Township, O. A. Thayer completed No. 3 Starner Bond as a commercial gas well, total depth 732 feet. No. 4 Bond is drilling. In section 21-5n-10w, Warren Hastings is drilling below 500 feet on the Homer Rodeheaver property.

In Perry County, section 6-6s-3w, Anderson Township, Charles Dice No. 5 Charles Krutz was drilled to 504 feet and produced 3 bbls. the first 24 hours. In section 21-5s-2w, A. J. Glenn is down 350 feet in a test on the John Snyder property. In Clark Township, section 25-4s-3w, Fred Conyers is drilling No. 5 on the Frank Delaisse farm. In section 18, Gardner Oil Co. is drilling below 325 feet in a test on the Anthony Holeman lease.

In Spencer County, section 13-6s-6w, Grass Township, Hollingsworth Oil & Gas Corp. No. 1 Patrick Axton was dry and abandoned at 1,317 feet. In Huff Township, section 6-6s-3w, George Beauchamp No. 3 John Heintz, total depth 519 feet, produced 8 bbls. the first 24 hours after a shot. Allen Cotton is drilling on the Silson Protsman lease in the NE SE section 1-6s-4w, same county. The Staves Drilling Co. is drilling below 300 feet on the John Bretz heirs property in section 35-6s-6w, Ohio Township.

OHIO FIELD

In Licking County, Ohio, section 1, Licking Township, Wehrle Gas Co. No. 2 John Murphy started at 5 bbls. after a shot at 732-39 feet. In section 23, Madison Township, G. H. Long, completed a 4-bbl. well on the Eliza Fulton property, sand at 767-84 feet. George Vandergrift's test on the T. E. Vanallen property, in section 17, Perry Township, made 37,000 feet of gas at 666 feet and will probably be shot. In section 10, Fallsbury Township, Emerald Petroleum Co. is spudding No. 8 Jasper Martin.

In Coshocton County, section 17, Perry Township, Preston Oil Co. No. 3 Cary D. Harris, was completed below the Clinton sand at 3,135-80 feet and made 56,000 feet of gas and a show of oil, naturally. The gas volume blew down to 40,000 feet in 72 hours and the well will be abandoned. In Lot 8, Linton Township, Little & Seger, are moving a rig on location for No. 6 C. C. Clemens.

Moss & Co. abandoned at 1,317 feet a test on the Walter Warne property, in section 15, Jefferson Township, Guernsey County. It has small gas showings. In section 17, same township, George Jewell's test on the William Barnes and others property was dry and abandoned at 1,292 feet. In section 24, Monroe Township, Roy Hammond & Co.'s test on the David Patton lease was dry and abandoned at 1,101 feet.

In section 10, Liberty Township, Guernsey County, Ferguson & McCullough No. 1 L. D. Tucker was completed below the second Berea formation at 1,100-02 feet and gauged 277,000 feet of gas naturally with a rock pressure of 237 pounds. In section 11, same township, Ronshauson & Co. are rigged up on the D. M. Wilson (Peter Milligan) property. Mullen Oil & Gas Co. test on the Rhoda Hoopman property, in Lot 26, Cambridge Township, topped the Berea sand at 1,076 feet, made a flash of gas at 1,086 feet, a scum of oil at 1,098 feet and is being plugged. Fred L. Turner & Co. are rigged up for the No. 4 on the Fred Turner property in section 1, Westland Township, In section 6, Jefferson Township, Ohio Fuel Gas Co. staked a location on the A. W. Marling property.

In Tuscarawas County, section 5, Sandy Township, West Virginia Natural Gas Co. staked a location on the George and Catherine Evans farm. In section 3, same township, East Ohio Gas Co. made a location on the John Bailey property. In section 4, Coshen Township, James Upham is spudding on the George Anderson lease. In section 11, Franklin Township, East Ohio Gas Co. is rigged on the J. C. Fernsell farm.

In Wayne County, section 4, Congress Township, Harmon & George, test on the Mary Long lease is a gas well completed below the Clinton sand at 2,906-12 feet. It gauged 187,000 feet of gas after a shot.

George Robinson & Co. No. 2 W. S. Atkinson, in section 25, Marion Township, Noble County, was completed below the second Salt sand at 741-55 feet and gauged 59,000 feet of gas after a shot of 25 quarts of nitroglycerine and 40 pounds of gelatine. In section 24, Jefferson Township, John Yerian, is spudding in No. 12 on the Albert Mallet heirs property.

Johnson Oil Co.'s test on the Clarence Busche property, section 10, Bethel Township, Monroe County, was shot in Keener sand at 1,314-29 feet. It started at 1 bbl. and made 34,222 feet of gas, which will be used on the lease. In section 5, Benton Township, Jims Run Oil & Gas Co. No. 3 Enos Haught gauged 554,200 feet of gas in the Salt sand at 1,348-69 feet and has been turned into the Hope Co. line. In Franklin Township, section 8, Heisler Oil & Gas Co. No. 1 Grace Mallet was shot in the Keener sand at 1,310-15 feet with 30 quarts and in the Injun sand at 1,350-57 feet with 20 quarts and is being cleaned out. In section 11, Washington Township, H. B. Walker & Co.'s test on the R. E. Griffin lease is being drilled deeper from the Squaw sand where it was previously completed.

In Hocking County, section 6, Ward Township, Preston Oil Co. No. 146 Sunday Creek Coal Co. made 168,960 feet of gas and a small show of oil after a 90-quart shot.

In Vinton County, section 4, Brown Township, Vung & McCartney No. 1 Celina Cornish made 1 bbl. of oil naturally from Berea sand at 1,243 feet.

Cumberland Oil Co. is rigged up for No. 22 on the Henry Hopkins property in Lot 18 Marion Township, Morgan County.

Hall & Henning Co. No. 5 Alice and Charles Algeo, in section 21, Grandview Township, Washington County, after a shot of 40 quarts in Keener sand at 1,570-87 feet is making 5 bbls. of oil a day. In section 34, Ludlow Township, Beardmore Gas Co. No. 6 Bertha Winland was good for 168,960 feet of gas in Injun sand at 1,222-1,370 feet. In the same section, Depuy Brothers rigged up No. 4 H. W. Winland. In section 6, Barlow Township, Devitt & Co. No. 16 Frances Fisher was completed in Stray sand at 631-62 feet and abandoned as dry. In section 17, Dunham Township, McTaggert & Co. No. 1 A. E. Ryan was completed in first Berea sand at 1,791-93 feet and gauged 170,000 feet of gas after a shot.

In the Newport pool, same county, W. F. Purgess & Co. No. 6 W. J. Todd, in section 28, Newport Township, had Cow Run sand at 455-70 feet, slate and shale at 470-605 feet and was abandoned after making a small show of oil at 463 feet. In section 27, J. W. Correll & Co. No. 1 Robert Cano was drilled through a broken third Salt sand at 825-960 feet without a show of oil or gas. The operators are going to pump the water from the Peaker sand to see if oil will come in after water is removed. Cale & Co. are rigged up for the second test on the C. H. Cale property in the same section.

In Knox County, section 17, Jefferson Township, Perkins & Co. are rigged up on the C. T. Danbury lease. In section 3, Union Township, Upham Gas Co. is rigged up for No. 4 Warner Farmer.

Ohio Fuel Gas Co. No. 1 Addie Douglas, in section 17, Lodi Township, Athens County, was completed as a commercial gas well in second Berea sand at 1,515-24 feet. In section 11, same township, A. D. Townsend is moving in machine on the Jacob Niggemeyer lease. In section 34, Rome Township, Ohio Fuel Gas Co. has staked location on the J. L. Winner property.

In Summit County, section 5, Tallmadge Township, Pawnee Corp. is rigged up for No. 3, county property.

East Ohio Gas Co. is moving in a rig on the Arthur Daily property in section 3, Jackson Township, Stark County.

In Meigs County, section 19, Lebanon Township, Carter & Smith No. 1 Mona Wolf was completed in first Berea sand at 2,107-10 feet, and failed to increase 70,000 feet of gas naturally with a shot of 20 quarts. In section 25, same township, Ohio Fuel Gas Co. abandoned the test on the Cyremus Rose property in Berea sand at 2,071-72 feet. In section 26, Ohio Fuel Gas Co. staked location on the William Curs property. In section 27, Bedford Township, C. A. Cody No. 2 C. E.

(Continued on Page 114)

Summary of Operations, All Fields, March

SUMMARY OF ALL FIELDS

Wells Completed

	Comp.	Prod.	Dry	Gas
Penna. Grade fields	388	644	35	70
Lima	8	54	1	3
Central Ohio	84	174	21	52
Indiana	3	0	2	1
Kentucky	9	360	1	0
Illinois	11	202	3	1
Michigan	92	28,940	30	18
Mississippi	2	0	2	0
Kansas	156	97,304	31	6
Oklahoma	197	63,161	53	7
North Cent. Texas	255	28,446	107	4
West Texas	266	235,334	30	2
Texas Panhandle	55	22,024	5	7
East Texas	172	6,516	6	0
East Cent. Texas	73	11,376	11	0
East Texas border counties	33	13,548	4	0
Gulf Coast, Texas	125	39,020	32	5
Southwest Texas	315	38,005	81	15
Gulf Coast, La.	48	14,493	21	1
North Louisiana	36	5,071	7	5
Arkansas	10	748	7	0
Montana	8	300	0	0
Wyoming	14	4,768	7	0
Colorado	1	0	1	0
New Mexico	55	52,419	1	2
Total March	2,416	662,907	499	199
Total February	1,871	455,294	391	175
Difference	545	207,613	108	24

Rigs and Wells Drilling

	Rigs	Drlg.	Ttl.
Penna. Grade fields	72	361	433
Lima	7	32	39
Central Ohio	76	166	242
Indiana	6	43	49
Kentucky	29	74	103
Illinois	21	32	53
Michigan	93	115	208
Florida	0	4	4
Alabama	0	2	2
Mississippi	6	9	15
Kansas	68	342	410
Oklahoma	68	471	539
North Cent. Texas	73	229	302
West Texas	123	423	546
Texas Panhandle	61	134	195
East Texas	57	93	150
East Central Texas	25	92	117
East Texas border counties	12	69	81
Gulf Coast, Texas	30	134	164
Southwest Texas	79	187	266
Gulf Coast, La.	13	86	99
North Louisiana	22	98	120
Arkansas	9	39	48
Montana	7	52	59
Wyoming	5	48	53
Colorado	0	30	30
New Mexico	18	127	145
Utah	2	7	9
Nebraska	0	3	3
Total March	982	3,802	4,484
Total February	815	3,240	4,055
Difference	167	262	429

KANSAS

Summary of Field Operations

County—	Comp.	Prod.	Dry	Rigs	Dlg.	Ttl.
Barber	0	0	0	2	2	4
Barton	15	9,964	3	5	31	36
Butler	4	480	2	1	12	13
Chase	0	0	0	0	2	2
Chautauqua	6	87	2	1	6	7
Clark	0	0	0	0	1	1
Coffey	2	68	0	1	3	4
Cowley	4	3,084	3	3	11	14
Decatur	1	0	1	1	0	1
Edwards	0	0	0	1	0	1
Elk	1	50	0	0	2	2
Ellis	2	3,388	0	8	27	35
Ellsworth	1	278	0	1	8	9
Finney	0	0	0	0	1	1
Grant	0	0	0	0	1	1
Greenwood	4	156	1	1	11	12
Harvey	5	1,195	2	0	4	4
Harper	0	0	0	0	1	1
Haskell	0	0	0	0	1	1
Kearny	1	0	0	1	1	2
Kingman	1	0	1	0	1	1
Lane	1	0	1	0	0	0
Logan	0	0	0	0	1	1
Lyon	0	0	0	1	1	2
Marion	0	0	0	1	2	3
McPherson	8	6,538	1	1	9	10
Meade	0	0	0	1	0	1
Mitchell	0	0	0	0	1	1
Morton	0	0	0	1	0	1
Ness	0	0	0	1	1	2
Pawnee	0	0	0	0	1	1
Pratt	0	0	0	0	1	1
Reno	13	7,182	1	7	31	38
Rice	31	16,317	3	10	54	64
Rooks	0	0	0	2	8	10
Rush	2	660	0	4	7	11
Russell	36	44,552	4	9	55	64
Saline	0	0	0	0	1	1
Sedgwick	2	427	1	0	7	7
Stafford	0	0	0	2	8	10
Stevens	1	0	0	0	1	1
Sumner	5	2,628	0	1	15	16
Trego	2	0	1	0	1	1
Woodson	8	250	4	1	11	12
Ttl. Mar.	156	97,304	31	68	342	410
Ttl. Feb.	148	87,474	42	78	333	411
Difference	8	9,830	11	10	9	1

Gas well completions: Chautauqua, 2; Kearny, 1; Stevens, 1; Barton, 2; total, 6.

OKLAHOMA

Summary of Field Operations

County—	Comp.	Prod.	Dry	Rigs	Dlg.	Ttl.
Atoka	1	0	1	0	2	2
Beckham	0	0	0	0	2	2
Caddo	1	0	0	2	4	6
Carter	3	185	0	1	15	16
Choctaw	0	0	0	0	1	1
Cleveland	4	8,348	1	0	9	9
Coal	1	0	1	0	1	1
Comanche	2	0	1	1	7	8
Cotton	1	0	1	0	4	4
Creek	15	165	4	9	40	49
Garfield	0	0	0	1	2	3
Garvin	3	185	1	1	9	10
Grady	0	0	0	0	3	3
Grant	0	0	0	0	1	1
Harmon	1	0	1	0	1	1
Haskell	0	0	0	1	0	1
Hughes	2	0	1	2	10	12
Jackson	2	88	1	0	3	3
Jefferson	2	90	0	2	11	13
Johnston	0	0	0	0	1	1
Kay	2	215	1	0	5	5
Kiowa	1	0	1	0	5	5
Latimer	0	0	0	0	1	1
Le Flore	0	0	0	0	1	1
Lincoln	0	0	0	0	9	9
Logan	3	4,608	0	4	14	18
Love	1	0	1	0	2	2
Marshall	1	0	1	1	2	3
McIntosh	0	0	0	0	1	1
Murray	0	0	0	1	2	3
Muskogee	9	60	5	2	9	11
Noble	2	1,458	0	0	10	10
Okfuskee	27	4,681	1	4	21	25
Oklahoma	15	11,064	1	4	30	34
Okmulgee	6	230	1	2	25	27
Osage	19	880	10	5	31	36
Pawnee	3	0	3	0	0	0
Pittsburg	0	0	0	0	1	1
Pontotoc	39	23,627	5	8	64	72
Pottawatomie	4	1,037	1	2	14	16
Pushmataha	0	0	0	0	1	1
Seminole	13	5,816	4	8	47	55
Stephens	3	15	1	0	14	14
Tillman	1	78	0	0	4	4
Texas	0	0	0	1	1	2
Tulsa	10	331	4	4	23	27
Wagoner	0	0	0	1	7	8
Washita	0	0	0	1	1	2
Ttl. Mar.	197	63,161	53	68	471	539
Ttl. Feb.	180	53,676	45	57	481	538
Difference	17	9,485	8	11	10	1

Gas well completions: Okmulgee, 2; Caddo, 1; Creek, 1; Comanche, 1; Hughes, 1; Muskogee, 1; total, 7.

GULF COAST

Louisiana

Summary of Field Operations

Field—	Comp.	Prod.	Dry	Rigs	Dlg.	Ttl.
Abbeville	1	25	0	0	0	0
Bayou Boullion	0	0	0	0	1	1
Anse La Butte	1	100	0	1	1	2
Bayou Mallet	1	0	1	0	0	0
Bayou Cocotriz	1	873	0	1	0	1
Caillou Island	2	1,401	0	0	1	1
Cameron Meadows	0	0	0	0	2	2
Cankton	1	9	0	0	1	1
Charenton	1	323	0	0	2	2
Choctaw	0	0	0	0	1	1
Darrow	0	0	0	0	1	1
Dog Lake	1	1,500	0	1	0	1
Fausse Point	1	18	0	0	0	0
Gillis	4	946	2	0	4	4
Garden Island	0	0	0	0	1	1
Hackberry	5	1,054	3	3	7	10
Iowa	1	573	0	0	0	0
Jeanerette	3	830	2	0	3	3
Jennings	1	722	0	2	9	11
Lafitte	1	1,392	0	1	1	2
Lake Barre	0	0	0	0	1	1
Lake Hermitage	0	0	0	0	1	1
Lake Pelto	0	0	0	0	1	1
Leesville	3	300	1	0	3	3
New Iberia	4	2,387	0	2	5	7
Port Barre	1	0	1	0	0	0
Roanoke	1	711	0	0	0	0
Sorrento	0	0	0	0	1	1
Starks	0	0	0	0	1	1
Sulphur	2	720	1	0	2	2
Tepetate	2	140	1	0	4	4
Valentine	1	480	0	0	3	3
White Castle	0	0	0	0	1	1
Miscellaneous	9	0	9	2	28	30
Ttl. Mar.	48	14,493	21	13	86	99
Ttl. Feb.	21	5,355	6	18	90	108
Difference	27	9,138	15	5	4	9

Gas wells completed: Leesville, 1.

Texas

Summary of Field Operations

Field—	Comp.	Prod.	Dry	Rigs	Dlg.	Ttl.
Ace	2	0	2	1	0	1
Amelia	4	2,244	0	1	7	8
Anahuac	10	4,418	1	2	4	6
Bay City	0	0	0	0	1	1
Taleferno	0	0	0	0	1	1
Big Hill	1	54	0	1	0	1
Big Creek	2	550	0	0	1	1
Blue Ridge	2	231	0	1	0	1
Boling	0	0	0	0	4	4
Clay Creek	1	0	1	0	1	1
Cleveland	1	0	1	0	1	1
Conroe	3	1,398	0	0	2	2
Cotton Lake	2	53	1	0	1	1
Dickinson	2	1,213	0	2	6	8
Esperson	0	0	0	0	1	1
Fannett	0	0	0	0	1	1
Five Corners	0	0	0	0	1	1
Hughes	1	0	0	0	1	1
Hankamer	0	0	0	0	1	1
Hastings	15	8,651	0	4	10	14
Hawkinsville	0	0	0	0	1	1
Heyser	4	991	0	0	4	4
Hitchcock	0	0	0	0	1	1
High Island	2	688	1	1	2	3
Hull	2	947	0	2	3	5
Humble	0	0	0	0	2	2
Keeran	0	0	0	0	2	2
La Belle	0	0	0	1	0	1
Lockridge	0	0	0	0	4	4
Manvel	2	835	0	0	4	4
Markham	5	154	3	0	1	1
Nome	2	657	0	0	4	4
Old Ocean	1	360	0	0	1	1
Orchard	1	0	1	1	1	2
Pickett Ridge	0	0	0	0	1	1
Pierce Junction	2	787	0	0	1	1
Placedo	7	1,234	0	3	5	8
Raccoon Bend	4	1,144	1	0	2	2
Refugio	1	80	0	0	2	2
Silsbee	3	680	0	0	3	3
Seabreeze	0	0	0	0	2	2
Segno	1	408	0	1	3	4
Sour Lake	1	150	0	0	0	0
South Houston	3	405	2	0	3	3
Spanish Camp	1	0	0	0	0	0
Tomball	8	2,864	0	1	4	5
Quintana-O'Connor	9	7,534	0	3	7	10
Van Vleck	0	0	0	0	3	3
West Columbia	0	0	0	0	1	1
Withers	3	290	1	1	2	3
Miscellaneous	17	0	17	4	21	25
Ttl. Mar.	125	39,020	32	30	134	164
Ttl. Feb.	92	28,109	20	39	121	160
Difference	32	911	12	9	13	4

Gas wells completed: Blue Ridge, 1; Hughes, 1; Markham, 1; Spanish Camp, 1; Tomball, 1; total, 5.

NORTH LOUISIANA

Summary of Field Operations

Parish—	Comp.	Prod.	Dry	Rigs	Dlg.	Ttl.
Bienville	2	0	0	0	2	2
Bossier	6	480	0	2	7	9
Caddo-Rodessa	8	3,281	0	1	17	18
Caddo-Other	9	152	4	5	23	28
Caldwell	0	0	0	0	1	1
Catahoula	0	0	0	1	0	1
Claiborne	2	974	1	5	10	15
De Soto	2	7	1	2	7	9
Franklin	0	0	0	0	1	1
Grant	1	30	0	0	1	1
Jackson	0	0	0	0	1	1
La Salle	2	11	0	0	1	1
Morehouse	0	0	0	0	1	1
Natchitoches	0	0	0	0	3	3
Ouachita	0	0	0	0	1	1
Red River	0	0	0	0	2	2
Richland	0	0	0	0	1	1
Sabine	4	130	1	0	5	5
Tensas	0	0	0	0	2	2
Union	0	0	0	1	1	2
Webster	0	0	0	4	11	15
Winn	0	0	0	1	0	1
Ttl. Mar.	36	5,071	7	22	98	120
Ttl. Feb.	22	3,279	8	22	88	110
Difference	14	1,792	1	0	10	10

Gas wells completed: Bienville, 2, 87,000,000 feet; Bossier, 3, 86,000,000 feet.

Rodessa wells gauged by making one-hour flow through restricted choke and multiplying by 24.

ARKANSAS

Summary of Field Operations

County—	Comp.	Prod.	Dry	Rigs	Dlg.	Ttl.
Calhoun	0	0	0	0	1	1
Clark	1	0	1	1	1	2
Dallas	1	0	1	0	0	0
Grant	0	0	0	0	1	1
Hempstead	1	0	1	0	3	3
Lafayette	0	0	0	0	2	2
Little River	0	0	0	0	2	2
Lonoke	0	0	0	1	0	1
Miller	0	0	0	2	3	5
Nevada	6	748	3	5	12	17
Ouachita	0	0	0	0	4	4
Poke	1	0	1	0	0	0
Saline	0	0	0	0	1	1
Sevier	0	0	0	0	1	1
Union	0	0	0	0	8	8
Ttl. Mar.	10	748	7	9	39	48
Ttl. Feb.	10	430	7	12	34	46
Difference	0	318	0	3	5	2

Gas wells completed: None.

MISSISSIPPI

Summary of Field Operations

County—	Comp.	Prod.	Dry	Rigs	Dlg.	Ttl.
Amity	0	0	0	0	1	1
Hinds	0	0	0	0	1	1
Bolivar	0	0	0	0	1	1
Washington	0	0	0	0	1	1
Simpson	0	0	0	1	0	1
Claiborne	0	0	0	0	1	1
Jones	0	0	0	1	0	1
Grenada	0	0	0	1	0	1
Lamar	2	0	2	0	2	2
Harrison	0	0	0	0	1	1
Yalobusha	0	0	0	1	0	1
Kemper	0	0	0	1	0	1
Perry	0	0	0	0	1	1
Pike	0	0	0	1	0	1
Ttl. Mar.	2	0	2	6	9	15
Ttl. Feb.	3	0	3	5	9	14
Difference	1	0	1	1	0	1

FLORIDA

Summary of Field Operations

Lake	0	0	0	0	2	2
Nassau	0	0	0	0	1	1
Hillsborough	0	0	0	0	1	1
Ttl. Mar.	0	0	0	0	4	4
Ttl. Feb.	0	0	0	0	4	4
Difference	0	0	0	0	0	0

ALABAMA

Summary of Field Operations

County—	Comp.	Prod.	Dry	Rigs	Dlg.	Ttl.
Choctaw	0	0	0	0	1	1
Houston	0	0	0	0	1	1
Ttl. Mar.	0	0	0	0	2	2
Ttl. Feb.	1	0	1	0	2	2
Difference	1	0	1	0	0	0

EAST TEXAS (Border Counties)

Summary of Field Operations

County—	Comp.	Prod.	Dry	Rigs	Dlg.	Ttl.
Bowie	1	0	1	0	4	4
Cass (Rodessa)	24	13,473	0	6	43	49
Harrison	5	74	0	1	7	8
Marion	1	0	1	3	9	12
Panola	1	0	1	2	2	4
Sabine	0	0	0	0	1	1
Shelby	1	0	1	0	3	3
Ttl. Mar.	33	13,548	4	12	69	81
Ttl. Feb.	31	15,294	1	11	66	77
Difference	2	1,747	3	1	3	4

Rodessa wells gauged by making one-hour flow through restricted choke and multiplying by 24.

Gas wells completed: None.

TEXAS PANHANDLE

Summary of Field Operations

County—	Comp.	Prod.	Dry	Rigs	Dlg.	Ttl.
Briscoe	0	0	0	0	1	1
Carson	8	4,928	0	8	11	19
Childress	0	0	0	1	0	1
Collingsworth	0	0	0	0	2	2
Dallam	0	0	0	0	1	1
Deaf Smith	0	0	0	0	1	1
Gray	13	6,610	0	13	41	54
Hansford	1	0	0	0	0	0
Hutchinson	21	9,885	1	23	53	76
Moore	3	100	0	8	16	24
Potter	0	0	0	0	1	1
Roberts	0	0	0	0	2	2
Wheeler	9	501	4	8	5	13
Ttl. Mar.	55	22,024	5	61	134	195
Ttl. Feb.	47	18,325	0	47	125	172
Difference	8	3,699	5	14	9	23

Gas wells completed: Hansford, 1; Hutchinson, 2; Moore, 2; Wheeler, 2; total, 7.

EAST TEXAS

Summary of Field Operations

County—	Comp.	Prod.	Dry	Rigs	Dlg.	Ttl.
Anderson	5	322	1	3	14	17
Angelina	2	12	1	2	4	6
Bowie	0	0	0	1	3	4
Cherokee	0	0	0	0	2	2
Falls	2	0	2	0	3	3
Fannin	1	0	1	0	3	3
Franklin	8	1,298	1	2	6	8
Freestone	0	0	0	1	1	2
Gregg	89	3,742	2	31	40	71
Henderson	3	359	0	2	5	7
Hopkins	11	3,929	0	5	3	8
Houston	0	0	0	1	3	4
Hunt	1	0	1	0	2	2
Kaufman	0	0	0	1	0	1
Lamar	0	0	0	0	1	1
Limestone	0	0	0	0	2	2
Rains	1	0	1	0	0	0
Red River	0	0	0	0	3	3
Rusk	56	2,068	1	15	25	40
Smith	6	187	0	0	4	4
Titus	38	5,456	2	6	32	38
Upshur	21	519	3	11	22	33
Van Zandt	1	0	1	1	6	7
Wood	0	0	0	0	1	1
Ttl. Mar.	245	17,892	17	82	185	267
Ttl. Feb.	178	9,821	7	78	153	231
Difference	67	8,071	10	4	32	36

Gas wells completed: None.

WEST TEXAS

Summary of Field Operations

County—	Comp.	Prod.	Dry	Rigs	Dlg.	Ttl.
Andrews	6	3,270	0	5	14	19
Brewster	0	0	0	0	2	2
Coke	0	0	0	2	0	2
Crane	16	15,065	4	5	36	41
Crockett	1	0	1	0	2	2
Dawson	0	0	0	0	1	1
Ector	23	27,674	0	20	72	92
Edwards	0	0	0	0	1	1
El Paso	0	0	0	0	1	1
Fisher	2	197	0	3	5	8
Gaines	0	0	0	1	2	3
Garza	0	0	0	0	2	2
Glasscock	6	2,581	1	2	4	6
Hockley	0	0	0	0	1	1
Howard	8	4,897	1	6	18	24
Hudspeth	0	0	0	0	1	1
Jeff Davis	0	0	0	0	1	1
Jones	19	2,975	9	4	29	33
Kimble	0	0	0	1	0	1
Loving	1	220	0	2	4	6
Nolan	1	0	1	0	0	0
Pecos	14	4,787	4	6	33	39
Presidio	0	0	0	0	2	2
Reagan	0	0	0	1	1	2
Runnels	0	0	0	2	0	2
Reeves	0	0	0	0	1	1
Schleicher	0	0	0	1	1	2
Scurry	0	0	0	1	2	3
Taylor	1	0	1	0	2	2
Terrell	1	0	1	0	0	0
Terry	0	0	0	0	1	1
Upton	25	12,518	2	8	38	46
Ward	71	93,207	4	14	71	85
Winkler	71	67,943	1	37	74	111
Yoakum	0	0	0	2	1	3
Ttl. Mar.	266	235,334	30	123	423	546
Ttl. Feb.	180	133,823	19	94	369	426
Diff.	86	101,511	11	29	54	120

Gas wells completed: Ward, 1; Winkler, 1; total, 2.

CENTRAL AND NORTH TEXAS

Summary of Field Operations

County—	Comp.	Prod.	Dry	Rigs	Dlg.	Ttl.
Archer	41	844	27	3	21	24
Baylor	1	0	1	0	0	0
Brown	0	0	0	1	0	1
Callahan	3	0	3	1	2	3
Clay	5	45	3	1	4	5
Coleman	2	0	0	0	4	4
Collin	0	0	0	1	1	2
Cooke	22	599	6	8	14	22
Denton	0	0	0	2	7	9
Eastland	2	0	1	1	8	9
Foard	1	1,580	0	0	0	0
Grayson	1	0	1	0	5	5
Hamilton	1	0	1	0	1	1
Hardeman	0	0	0	0	1	1
Jack	43	13,178	7	14	48	62
McCulloch	0	0	0	0	2	2
Montague	18	1,013	5	3	11	14
Palo Pinto	2	0	1	0	7	7
Shackelford	26	1,632	12	4	22	26
Stephens	0	0	0	1	6	7
Tarrant	0	0	0	0	2	2
Throckmorton	3	0	3	0	1	1
Wichita	37	3,310	14	20	26	46
Wilbarger	9	240	2	5	10	15
Wise	1	0	1	0	2	2
Young	37	6,005	19	8	24	32
Ttl. Mar.	255	28,466	107	73	229	302
Ttl. Feb.	206	16,117	99	59	202	261
Difference	49	12,329	8	14	27	41

Gas wells completed: Coleman, 2; Eastland, 1; Palo Pinto, 1; total, 4.

SOUTHWEST TEXAS

Summary of Field Operations

Field—	Comp.	Prod.	Dry	Rigs	Dlg.	Ttl.
Agua Dulce	0	0	0	2	1	3
Alta Mesa	2	425	0	0	2	2
Alta Verde	1	0	1	1	0	1
Alworth	2	0	1	1	0	1
Barbacoas	0	0	0	0	1	1
Bentonville	2	0	0	1	1	2
Branyon	9	565	1	3	6	9
Buchanan	1	30	0	0	0	0
Burnell	1	0	0	0	0	0
Chapman Ranch	1	120	0	0	1	1
Charamousca	2	115	1	1	1	2
Charco Redondo	0	0	0	1	0	1
Clara Driscoll	4	20	3	1	2	3
Cole	1	0	0	0	3	3
Colmena	10	795	2	2	1	3
Cooksey	0	0	0	0	1	1
Cuellar	1	0	1	0	1	1
Darst Creek	2	260	0	3	9	12
Driscoll	0	0	0	0	1	1
Dunlap	0	0	0	0	1	1
Escobas	12	310	5	2	3	5
Flour Bluff	9	1,440	0	0	6	6
Govt. Wells	5	370	1	2	1	3
Haynes	13	420	3	1	2	3
Hoffman	10	1,670	1	2	2	4
Ina	1	5	0	0	0	0
Jacob	2	10	1	0	1	1
Kingsville	0	0	0	1	1	2
Kohler	1	155	0	1	2	3
Labbe	1	35	0	0	1	1
La Blanca	1	0	1	0	1	1
La Sal Vieja	0	0	0	0	1	1
Loma Novia	21	4,040	3	2	7	9
London	0	0	0	0	3	3
Lopena	2	0	1	0	2	2
Lopez	20	5,590	0	1	5	6
Los Olmos	1	0	1	0	2	2
McCampbell	5	380	1	1	7	8
Mercedes	0	0	0	1	0	1
Noak	1	500	0	0	0	0
Nolte	0	0	0	1	2	3
N. Pettus	2	100	0	1	0	1
Oakville	1	0	0	1	0	1
O'Hern	19	3,430	3	2	4	6
Palangana	0	0	0	2	0	2
Pearsall	1	840	0	0	1	1
Peters	2	10	1	0	0	0
Piedra Lumbre	3	440	0	0	1	1
Plummer	0	0	0	0	1	1
Plymouth	3	575	0	1	4	5
Randado	2	0	2	0	0	0
Ricaby	0	0	0	0	2	2
Rio Grande City	0	0	0	1	3	4
Samfordyce	5	655	1	2	4	6
Sandia	2	60	1	1	0	1
Sal Mar	1	20	0	0	0	0
Sarnosa	1	95	0	0	0	0
Saxet	44	5,820	3	6	24	30
Saxet Heights	10	980	1	2	3	5
Seven Sisters	14	5,260	2	2	4	6
Slick	2	150	1	1	0	1
Stratton	0	0	0	0	1	1
Strouch	1	225	0	1	0	1
Sullivan	1	145	0	0	2	2
Sweeden	1	135	0	1	1	2
Taft	5	500	0	3	3	6
Taylor	1	5	0	0	0	0
West Premont	11	1,165	1	1	5	6
White Point	1	120	0	0	0	0
Zobrowski	1	20	0	2	0	2
Miscellaneous	37	0	37	18	43	61
Ttl. Mar.	315	38,005	81	79	187	266
Ttl. Feb.	181	24,020	47	69	175	244
Difference	134	13,985	34	10	12	22

Gas wells completed: Alworth, 1; Bentonville, 2; Burnell, 1; Cole, 1; Colmena, 1; Loma Novia, 2; Lopena, 1; Lopez, 1; Saxet, 4; Seven Sisters, 1; total, 15.

ROCKY MOUNTAIN AREA

New Mexico

Summary of Field Operations

County—	Comp.	Prod.	Dry	Rigs	Dlg.	Ttl.
Bernalillo	0	0	0	0	2	2
McKinley	0	0	0	0	6	6
Santa Fe	0	0	0	0	2	2
San Juan	0	0	0	0	3	3
San Miguel	0	0	0	0	3	3
Valencia	0	0	0	0	2	2
Lea	51	51,959	1	16	90	106
Eddy	4	460	0	1	12	13
Chaves	0	0	0	1	2	3
Roosevelt	0	0	0	0	2	2
Otero	0	0	0	0	2	2
Ttl. Mar.	55	52,419	1	18	127	145
Ttl. Feb.	34	44,075	6	6	89	95
Difference	21	8,344	5	12	38	50

Gas wells completed: Lea, 2.

Colorado

Summary of Field Operations

County—	Comp.	Prod.	Dry	Rigs	Dlg.	Ttl.
Adams	0	0	0	0	2	2
Archuleta	0	0	0	0	6	6
La Plata	0	0	0	0	2	2
Larimer	0	0	0	0	2	2
Las Animas	1	0	1	0	2	2
Moffat	0	0	0	0	4	4
Park	0	0	0	0	3	3
Misc.	0	0	0	0	9	9
Ttl. Mar.	1	0	1	0	30	30
Ttl. Feb.	2	840	1	2	28	30
Difference	1	840	0	2	2	0

Gas wells completed: None.

Wyoming

Summary of Field Operations

County—	Comp.	Prod.	Dry	Rigs	Dlg.	Ttl.
Albany	1	200	0	0	4	4
Big Horn	2	1,500	1	0	8	8
Carbon	3	25	2	0	5	5
Converse	0	0	0	1	3	4
Fremont	0	0	0	0	3	3
Goshen	1	0	1	0	0	0
Lincoln	0	0	0	0	4	4
Laramie	1	0	1	0	0	0
Natrona	0	0	0	0	4	4
Niobrara	3	3,042	0	2	7	9
Park	0	0	0	0	1	1
Uinta	0	0	0	1	2	3
Washakie	0	0	0	0	2	2
Weston	3	1	2	1	1	2
Misc.	0	0	0	0	4	4
Ttl. Mar.	14	4,768	7	5	48	53
Ttl. Feb.	9	4,412	3	1	46	47
Difference	5	356	4	4	2	6

Gas wells completed: None.

Utah

Summary of Field Operations

County—	Comp.	Prod.	Dry	Rigs	Dlg.	Ttl.
Total Mar.	0	0	0	2	7	9
Total Feb.	0	0	0	1	7	8
Difference	0	0	0	1	0	1

Montana

Summary of Field Operations

County—	Comp.	Prod.	Dry	Rigs	Dlg.	Ttl.
Big Horn	0	0	0	0	3	3
Carbon	1	0	0	0	3	3
Fallon	0	0	0	0	2	2
Fergus	0	0	0	0	7	7
Glacier	4	280	0	2	9	11
Petroleum	0	0	0	0	3	3
Phillips	0	0	0	0	3	3
Pondera	0	0	0	1	3	4
Toole	2	50	0	2	13	15
Yellowstone	1	70	0	2	0	2
Misc.	0	0	0	0	6	6
Ttl. Mar.	8	300	0	7	52	59
Ttl. Feb.	4	200	2	4	48	52
Difference	4	100	2	3	4	7

Gas wells completed: Carbon, 1; Glacier, 1; total, 2.

Nebraska

Summary of Field Operations

County—	Comp.	Prod.	Dry	Rigs	Dlg.	Ttl.
Total Mar.	0	0	0	0	3	3
Total Feb.	0	0	0	0	2	2
Difference	0	0	0	0	1	1

MICHIGAN

Summary of Field Operations

County—	Comp.	Prod.	Dry	Rigs	Dlg.	Ttl.
Alcona	0	0	0	1	0	1
Allegan	1	35	0	1	1	2
Arenac	8	1,445	2	4	7	11
Cass	0	0	0	1	0	1
Chippewa	0	0	0	1	0	1
Clare	1	0	1	1	0	1
Gladwin	21	22,076	1	30	50	80
Gratiot	6	0	1	5	2	7
Isabella	17	2,922	10	7	17	24
Hillsdale	0	0	0	1	0	1
Ionia	0	0	0	0	1	1
Iosco	0	0	0	1	0	1
Jackson	0	0	0	1	0	1
Kent	0	0	0	1	1	2
Lake	1	0	1	0	0	0
Lapeer	0	0	0	0	1	1
Lenawee	0	0	0	0	2	2
Mackinac	0	0	0	1	0	1
Macomb	0	0	0	1	0	1
Mecosta	2	0	2	1	3	4
Midland	5	1,480	0	5	9	14
Missaukee	0	0	0	0	1	1
Monroe	0	0	0	1	1	2
Montcalm	14	445	8	11	5	16
Muskegon	6	0	0	3	2	5
Newaygo	0	0	0	1	0	1
Ogemaw	7	537	2	5	7	12
Osceola	1	0	1	2	0	2
Otsego	0	0	0	1	1	2
Ottawa	0	0	0	1	0	1
Saginaw	0	0	0	1	0	1
St. Clair	0	0	0	1	1	2
Shiawassee	0	0	0	1	0	1
Tuscola	1	0	1	0	0	0
Washtenaw	1	0	0	1	0	1
Wayne	0	0	0	1	3	4
Ttl. Mar.	92	28,940	30	93	115	208
Ttl. Feb.	51	9,664	20	68	122	190
Difference	41	19,276	10	25	7	18

Gas wells completed: Arenac, 1; Gratiot, 5; Isabella, 1; Montcalm, 4; Muskegon, 6; Washtenaw, 1; total, 18.

INDIANA FIELD

Summary of Field Operations

County—	Comp.	Prod.	Dry	Rigs	Dlg.	Ttl.
Daviess	0	0	0	0	3	3
Decatur	1	0	0	1	3	4
Gibson	0	0	0	0	3	3
Hancock	0	0	0	0	2	2
Harrison	0	0	0	0	1	1
Hamilton	0	0	0	0	2	2
Jay	0	0	0	0	2	2
Knox	0	0	0	0	4	4
Martin	0	0	0	0	1	1
Perry	0	0	0	1	3	4
Pike	1	0	1	0	5	5
Posey	0	0	0	0	2	2
Randolph	0	0	0	0	1	1
Ripley	0	0	0	0	1	1
Shelby	0	0	0	0	2	2
Spencer	0	0	0	1	2	2
Vanderburgh	1	0	1	1	2	3
Vigo	0	0	0	1	1	2
Sullivan	0	0	0	1	1	2
Warrick	0	0	0	0	2	2
Ttl. Mar.	3	0	2	6	43	49
Ttl. Feb.	7	45	3	5	34	39
Difference	4	45	1	1	9	10

Gas wells completed: Decatur, 1.

KENTUCKY FIELD

Summary of Field Operations

County—	Comp.	Prod.	Dry	Rigs	Dlg.	Ttl.
Henderson	0	0	0	1	4	5
Johnson	0	0	0	0	6	6
McLean	1	50	0	8	19	27
Ohio	8	310	1	10	25	35
Warren	0	0	0	2	2	4
Wayne	0	0	0	8	18	26
Ttl. Mar.	9	360	1	29	74	103

Gas wells completed: None.

CENTRAL OHIO FIELD

Summary of Field Operations

County—	Comp.	Prod.	Dry	Rigs	Dlg.	Ttl.
Ashland	2	0	1	4	6	10
Athens	4	0	1	5	14	19
Belmont	4	0	1	2	5	7
Coshocton	4	0	1	2	3	5
Cuyahoga	1	16	0	1	1	2
Delaware	0	0	0	0	1	1
Fairfield	2	0	0	2	2	4
Guernsey	8	0	1	6	8	14
Harrison	0	0	0	0	1	1
Huron	3	0	0	0	2	2
Holmes	1	0	0	2	5	7
Hocking	1	0	1	2	2	5
Knox	2	0	0	4	5	9
Licking	4	16	2	2	6	8
Lawrence	0	0	0	1	0	1
Lorain	5	0	1	2	7	9
Medina	3	25	0	1	8	9
Meigs	9	0	2	7	9	16
Morgan	3	0	0	2	6	8
Monroe	5	1	2	3	8	11
Noble	0	0	0	2	8	8
Muskingum	1	0	0	2	3	5
Perry	3	100	0	4	7	11
Portage	1	0	1	1	0	1
Richland	0	0	0	0	2	2
Stark	5	0	0	4	12	16
Summit	1	0	0	2	3	5
Tuscarawas	2	0	1	2	3	5
Wayne	4	0	4	3	5	8
Washington	5	11	2	8	20	28
Vinton	1	5	0	0	5	5
Ttl. Mar.	84	174	21	76	166	242
Ttl. Feb.	62	260	21	43	145	188
Difference	22	86	0	33	21	54

Gas wells completed: Ashland, 1; Athens, 3; Belmont, 3; Coshocton, 3; Fairfield, 2; Guernsey, 7; Huron, 3; Holmes, 1; Knox, 2; Lorain, 4; Medina, 2; Meigs, 7; Morgan, 3; Monroe, 2; Muskingum, 1; Perry, 1; Stark, 5; Summit, 1; Tuscarawas, 1; total, 52.

LIMA FIELD

Summary of Field Operations

County—	Comp.	Prod.	Dry	Rigs	Dlg.	Ttl.
Allen	0	0	0	0	1	1
Darke	0	0	0	0	1	1
Hancock	4	39	1	1	2	3
Hardin	1	0	0	0	4	4
Fulton	0	0	0	0	2	2
Henry	0	0	0	0	1	1
Lucas	0	0	0	0	2	2
Logan	0	0	0	0	2	2
Putnam	0	0	0	0	3	3
Sandusky	0	0	0	1	2	3
Seneca	2	15	0	2	5	7
Shelby	1	0	0	2	0	2
Wood	0	0	0	1	5	6
Wyandot	0	0	0	0	2	2
Ttl. Mar.	8	54	1	7	32	39
Ttl. Feb.	4	7	1	4	29	33
Difference	4	47	0	3	3	6

Gas wells completed: Hardin, 1; Seneca-1; Shelby, 1; total, 3.

ILLINOIS FIELD

Summary of Field Operations

County—	Comp.	Prod.	Dry	Rigs	Dlg.	Ttl.
Christian	1	0	1	0	0	0
Bond	1	0	0	2	0	2
Bureau	0	0	0	1	0	1
Champaign	0	0	0	1	0	1
Clay	0	0	0	1	1	2
Clark	0	0	0	3	1	4
Clinton	3	24	1	3	2	5
Coles	0	0	0	1	0	1
Crawford	3	46	0	0	3	4
DeKalb	0	0	0	1	0	1
Edwards	0	0	0	0	1	1
Effingham	0	0	0	0	1	1
Favette	0	0	0	1	0	1
Greene	0	0	0	0	1	1
Hancock	0	0	0	0	1	1
Hardin	0	0	0	1	0	1
Iroquois	0	0	0	0	1	1
Jasper	0	0	0	1	2	3
Jefferson	0	0	0	0	1	1
Kane	0	0	0	0	1	1
Lawrence	0	0	0	0	2	2
McDonough	0	0	0	0	3	3
Macoupin	0	0	0	1	0	1
Madison	0	0	0	0	1	1
Marion	1	52	0	2	2	4
Massac	0	0	0	0	1	1
Perry	0	0	0	0	1	1
Pike	0	0	0	0	1	1
Rock Island	0	0	0	0	1	1
St. Clair	0	0	0	1	0	1
Vermilion	0	0	0	0	1	1
Wabash	2	80	1	0	0	0
Washington	0	0	0	1	0	1
Wayne	0	0	0	0	2	2
Will	0	0	0	0	1	1
Ttl. Mar.	11	202	3	21	32	53
Ttl. Feb.	0	0	0	2	12	14
Difference	11	202	3	19	20	39

Gas wells completed: Bond County, 1.

PENNSYLVANIA GRADE FIELDS

Summary of Field Operations

Field—	Comp.	Prod.	Dry	Rigs	Dlg.	Ttl.
Bradford	163	148	0	16	91	107
Allegany	64	37	0	6	39	45
N. Y.-Penna. Gas	7	0	5	5	15	20
Venango-Clarion	21	25	0	8	13	21
Butler-Armstrong	3	6	0	2	9	11
S.W. Penna.	21	128	5	7	33	40
S.E. Ohio	35	201	9	10	43	53
W. Virginia	74	99	16	18	118	136
Ttl. Mar.	388	644	35	72	361	433
Ttl. Feb.	390	733	26	80	382	462
Difference	2	89	9	8	21	29

Gas wells completed: N.Y.-Pa. gas field, 2; Venango-Clarion, 1; Butler-Armstrong, 1; S.W. Penna., 11; S.E. Ohio, 13; West Virginia, 42; total, 70.

WILDCAT OPERATIONS

CALIFORNIA

IMPORTANT WELLS AND NORTHERN CALIFORNIA WILDCATS

Company, well and location:	S.T.R.	Depth	Status
Shell Oil Co., No. 1-20 Capitan, Santa Barbara Co.	32- 5-30	2,717	pump 180 b.d.
Erickson, G., No. 1 Santa Maria, Santa Barbara Co.	16-10-34	3,228	dry; abd.
Union Oil Co., No. 2-V Santa Maria, Santa Barbara Co.	30-10-33	3,150	sd. sh. drlg.
Union Oil Co., No. 1-O Santa Maria, Santa Barbara Co.	21-10-34	3,932	sd. sh. drlg.
Union Oil Co., No. 12 Orcutt, Santa Barbara Co.	26- 9-34	4,037	pump 240 b.d.
Union Oil Co., No. 18 Orcutt, Santa Barbara Co.	26- 9-34	2,864	sd. sh. drlg.
Rice Ranch Oil Co., No. 4 Orcutt, Santa Barbara Co.	23- 9-34	3,315	sd. sh. drlg.
Valley Oil Co., No. 1 Casmalia, Santa Barbara Co.	20- 9-34	1,921	sd. sh. drlg.
Moyle, B. A., No. 1 Gato Ridge, Santa Barbara Co.	4- 8-32	2,625	br. sh. drlg.
Barnsdall Oil Co., No. 6 Gato Ridge, Santa Barbara	9- 8-32	2,515	rig. to pump
Barnsdall Oil Co., No. 8 Gato Ridge, Santa Barbara	9- 8-32	1,804	sd. sh. drlg.
Stewart-Carter Oil, No. 1 Gato Ridge, Santa Barbara	4- 8-32	2,311	cmtd. 2,160
Petrol Corp., No. 3-A Gato Ridge, Santa Barbara Co.	9- 8-32	2,726	sd. sh. drlg.
Fisher, Dan, No. 1 Cuyama, Santa Barbara Co.	28-11-28	646	sd. sh. drlg.
Calumet Oil Co., No. 16 Shiells, Ventura Co.	3- 3-19	4,466	P.B. 3,310
Union Oil Co., No. 16 Bardsdale, Ventura Co.	12- 3-20	1,291	sd. sh. drlg.
Condor Oil Co., No. 1 Sespe, Ventura Co.	6- 4-19	1,750	br. sh. drlg.
Ivers, H. A., No. 14 Star, Sespe, Ventura Co.	1- 4-20	451	sd. sh. drlg.
Merchants Pet. Co., No. 7 Sespe, Ventura Co.	1- 4-20	918	O.S. drlg.
Speik Oil Co., No. 2 Sespe, Ventura Co.	33- 5-19	2,183	hd. sh. drlg.
Colima Oil Co., No. 2 Sespe, Ventura Co.	25- 5-19	2,290	sd. sh. drlg.
Bolsa Chica Oil Co., No. 5 Temescal, Ventura Co.	5- 4-18	2,000	br. sh. drlg.
Pacific Western Oil Co., No. 10 Temescal, Ventura Co.	3- 4-18	2,897	sd. sh. drlg.
St. Louis Oil Co., No. 3 Ojai, Ventura Co.	13- 4-24	1,098	rd. sd. drlg.
Vai, Giovani, No. 1 Ojai, Ventura Co.	4- 4-21	130	sd. sh. drlg.
Continental Oil Co., No. 1 Red Mountain, Ventura Co.	7- 3-23	6,051	hd. sd. drlg.
C. C. M. Oil Co., No. 2 Padre Canyon, Ventura Co.	23- 3-24	6,465	redrlg. 3,031
C. C. M. Oil Co., No. 5-A Padre Canyon, Ventura Co.	15- 3-24	4,391	sd. sh. drlg.
Continental Oil Co., No. 3 Padre Canyon, Ventura Co.	15- 3-24	3,531	hd. sh. drlg.
Calco Pet. Corp., No. 4 South Mountain, Ventura Co.	17- 3-20	4,105	bailing
Associated Oil Co., No. 29 Lloyd, Ventura, Ventura	27- 3-23	5,320	sd. sh. drlg.
Associated Oil Co., No. 60 Lloyd, Ventura, Ventura	27- 3-23	3,991	sd. sh. drlg.
Associated Oil Co., No. 64 Lloyd, Ventura, Ventura	27- 3-23	5,333	recmtd. 5,333
Associated Oil Co., No. 66 Lloyd, Ventura, Ventura	27- 3-23	4,975	sd. sh. drlg.
Associated Oil Co., No. 137 Lloyd, Ventura, Ventura	27- 3-23	6,000	sd. sh. drlg.
General Pet. Corp., No. 17 Barnard, Ventura, Ventura	23- 3-23	7,030	sd. sh. drlg.
C. C. M. Oil Co., No. 13-B Rincon, Ventura Co.	8- 3-24	4,176	O.S. drlg.
General Pet. Corp., No. 3-A Rincon, Ventura Co.	8- 3-24	4,512	pump 25 b.d.
Lube Oil Co., No. 1 Devils Den, Kern Co.	2-25-18	4,285	P.B. 3,450
Den Pet. Co., No. 1 Devils Den, Kern Co.	20-25-19	3,676	br. sh. drlg.
Goodrum, George, No. 1 Devils Den, Kern Co.	24-25-18	101	cable tools
Texas Co., No. 2 Theta, Lost Hills, Kern Co.	11-26-20	1,147	pump 40 b.d.
Tide Water A. O. Co., No. 9-A-3 Lost Hills, Kern Co.	11-26-20	1,560	rig to pump
Welport Oil Co., No. 18 McKittrick, Kern Co.	26-29-21	1,040	cleaning out
Continental Oil Co., No. 1 Wasco, Kern Co.	8-27-24	9,555	cleaning out
Seaboard Oil Corp., No. 1 Wasco, Kern Co.	26-27-24	5,994	sd. sh. drlg.
Belridge Oil Co., No. 3-35 North Belridge, Kern Co.	35-27-20	3,151	sd. sh. drlg.
Belridge Oil Co., No. 24-35 North Belridge, Kern Co.	35-27-20	6,131	br. sh. drlg.
Belridge Oil Co., No. 62-27 North Belridge, Kern Co.	27-27-20	8,020	O.S. drlg.
Belridge Oil Co., No. 21-1 North Belridge, Kern Co.	1-28-20	7,461	br. sh. drlg.
Tide Water Associated, No. 6 North Belridge, Kern	34-27-20	3,000	br. sh. drlg.
Doyle Pet. Co., No. 2 Quinn, Jasmine, Kern Co.	15-25-27	2,400	sd. sh. drlf.
Honolulu Oil Corp., No. 24 Round Mountain, Kern Co.	18-28-29	2,023	O.S. drlg.
Honolulu Oil Corp., No. 25 Round Mountain, Kern Co.	18-28-29	2,223	pump 200 b.d.
Shell Oil Co., No. 13 Freeman, Round Mountain, Kern	20-28-29	1,594	sd. sh. drlg.
Republic Pet. Co., No. 12-S, Round Mountain, Kern	24-28-27	1,891	sd. sh. drlg.
Tide Water Associated, No. 42 Kern Front, Kern Co.	23-28-27	2,200	pump 50 b.d.
Tide Water Associated, No. 52 Kern Front, Kern Co.	23-28-27	1,985	sd. sh. drlg.
Kern River Oilfields, No. 25-2-B Kern Front, Kern Co.	25-28-27	921	sd. sh. drlg.
Dougan Oil Co., No. 2 Kern Front, Kern Co.	17-28-27	2,890	cmtd. 2,843
Oil, Inc., No. 7-2 Kern Front, Kern Co.	13-28-27	1,190	recmtd. 1,145
Barnhart & Morrow, No. 1 Davies, Kern Front, Kern	3-28-27	2,910	gr. sd. drlg.
Bishop Oil Co., No. 8 Fano, Kern Front, Kern Co.	23-28-27	1,742	O.S. drlg.
California Star Oil Co., No. 7-80 Kern Front, Kern Co.	22-28-27	2,654	bailing
Standard Oil Co., No. 5 Ward, Kern Front, Kern Co.	24-28-27	1,970	rig to pump
Standard Oil Co., No. 5-9 Kern Front, Kern Co.	9-28-27	2,810	pump 111 b.d.
Pioneer Oil Co., No. 1 Kern Front, Kern Co.	18-28-28	1,308	P.B. 1,110
H. C. L. Co., No. 1 Kern Front, Kern Co.	36-28-27	1,597	sd. sh. drlg.
Milburn, E. B., No. 2 Kern Front, Kern Co.	10-28-27	1,996	sd. sh. drlg.
Texas Co., No. 6 Lehman, Kern Front, Kern Co.	23-28-27	2,008	completing
National Oil Co., No. 9 Gates, Kern Front, Kern Co.	2-28-29	1,821	P.B. 1,481
Terry & Associates, No. 1-A Kern River, Kern Co.	4-29-28	1,990	idle
Superior Oil Co., No. 1 Bakersfield, Kern Co.	36-29-28	4,098	sd. sh. drlg.
Sunset Oil Co., No. 1 Union Avenue, Kern Co.	17-30-28	1,540	sd. sh. drlg.
Ekoh Oil Co., No. 2 Vedder, Mount Poso, Kern Co.	28-26-28	1,454	hd. sd. drlg.
C. C. M. Oil Co., No. 1 Alford, Mount Poso, Kern Co.	35-27-27	4,013	hd. sh. drlg.
Chevalier, J. J., No. 3 S. P., Mount Poso, Kern Co.	3-27-28	1,475	O.S. drlg.
Recovery Oil Co., No. 2 S. P., Mount Poso, Kern Co.	33-26-28	1,400	sd. sh. drlg.
Hub Oil Co., No. 1 Mount Poso, Kern Co.	8-28-28	1,560	sd. sh. drlg.
Magee, H. H., No. 2 Fruitvale, Kern Co.	23-29-27	3,235	idle
H. & H. Oil Co., No. 1 Fruitvale, Kern Co.	23-29-27	3,256	idle
Western Gulf Oil Co., No. 35 Fruitvale, Kern Co.	21-29-27	3,952	fishing
Western Gulf Oil Co., No. 36 Fruitvale, Kern Co.	21-29-27	3,876	O.S. drlg.
Kasey & Associates, No. 1 Fruitvale, Kern Co.	23-29-27	3,114	redrlg. 2,575
Exeter Oil Co., No. 2 Fruitvale, Kern Co.	21-29-27	4,185	sd. sh. drlg.
Trico Oil & Gas Co., No. 3 Fruitvale, Kern Co.	23-29-27	2,751	sd. sh. drlg.
Pal-Pen Oil Co., No. 2 Fruitvale, Kern Co.	23-29-27	3,132	O.S. drlg.
Banducci, L. J., No. 2-7 Fruitvale, Kern Co.	26-29-27	3,392	pump. water
Crude Oil Prod. Co., No. 1 Fruitvale, Kern Co.	21-29-27	1,752	sd. sh. drlg.
Kelley, C. J., No. 2 Fruitvale, Kern Co.	23-29-27	3,160	sd. sh. drlg.
American Expl. Co., No. 1 Mountain View, Kern Co.	18-30-29	3,297	sd. sh. drlg.
Vesta Oil Co., No. 1 Mountain View, Kern Co.	19-30-29	4,970	flow. 100 b.d
Wood-Callahan Oil Co., No. 3 Mountain View, Kern	25-30-28	5,965	P.B. 5,866
Hogan Pet. Co., No. 4 Symons, Mountain View, Kern	5-31-29	6,557	P.B. 6,188
Hogan Pet. Co., No. 8 Wharton, Mountain View, Kern	32-30-29	5,866	flow. 586 b.d.
Liko Pet. Co., No. 1 Mountain View, Kern Co.	19-30-29	5,359	completing
Trico Oil Co., No. 2 Wilson, Mountain View, Kern Co.	13-30-28	5,047	dry; abd.
General Pet. Corp., No. 1-F Mountain View, Kern Co.	19-30-29	3,895	sd. sh. drlg.
Mohawk Pet. Co., No. 9-C Mountain View, Kern Co.	30-30-29	5,998	sd. sh. drlg.
Allied Pet. Co., No. 20 Mountain View, Kern Co.	19-30-29	5,457	redrlg. 5,260
Monterey Expl. Co., No. 6 Duff, Edison, Kern Co.	15-30-28	1,570	sd. sh. drlg.
Metro Oil Co., No. 1 Edison, Kern Co.	6-30-29	2,701	P.B. 2,615
Johnson-Leaf Oil Co., No. 1 Edison, Kern Co.	24-30-29	1,360	pump. water
Bear Mountain Oil Co., No. 2 Arvin, Kern Co.	16-31-30	1,451	sd. sh. drlg.
Arkelo Oil Co., No. 1 Lerdo, Kern Co.	23-28-26	10,050	fish. D.P.
Tide Water Associated, No. 1 Rio Bravo, Kern Co.	30-29-25	9,002	dry; abd.
Union Oil Co., No. 1-34 Rio Bravo, Kern Co.	34-28-25	4,874	sd. sh. drlg.
Continental Oil Co., No. 1 Rosedale, Kern Co.	12-29-26	6,976	gr. sd. drlg.
Standard Oil Co., No. 11-2 Greeley, Kern Co.	20-29-26	8,100	sd. sh. drlg.
Standard Oil Co., No. 11-3 Greeley, Kern Co.	20-29-26	7,730	salt water
Standard Oil Co., No. 12-1 Greeley, Kern Co.	30-29-26	7,884	fish. reamer
Standard Oil Co., No. 14-1 Greeley, Kern Co.	4-30-26	8,000	gr. sd. drlg.
Mohawk Pet. Co., No. 1 Greeley, Kern Co.	23-29-25	7,552	sd. sh. drlg.
Union Oil Co., No. 2 San Emidio, Kern Co.	34-11-22	961	sd. sh. drlg.
Shell Oil Co., No. 21-14 Old River, Kern Co.	14-30-25	5,950	sd. sh. drlg.
Shell Oil Co., No. 23-30 Ten Section, Kern Co.	30-30-26	7,998	O.S. drlg.
Shell Oil Co., No. 1 Ten Section, Kern Co.	29-30-26	8,240	O.S. drlg.
Signal Oil & Gas Co., No. 1 Ten Section, Kern Co.	21-30-27	7,883	sd. sh. drlg.
Superior Oil Co., No. 8 Ten Section, Kern Co.	11-30-26	10,875	sd. sh. drlg.
Ohio Oil Co., No. 4-A Buena Vista Lake, Kern Co.	32-31-26	5,276	flow. gas
C. C. M. Oil Co., No. 23-21 Midway-Sunset, Kern Co.	21-32-23	2,100	O.S. drlg.
C. C. M. Oil Co., No. 1-W.P. Midway-Sunset, Kern Co.	28-32-23	3,584	P.B. 2,355
Midcrude Oil Co., No. 2 Midway-Sunset, Kern Co.	22-32-23	1,725	sd. sh. drlg.
General Pet. Corp., No. 49 Midway-Sunset, Kern Co.	24-31-23	4,424	pump. water
R. & W. Oil Co., No. 4 Midway-Sunset, Kern Co.	6-11-23	3,420	recmtd. 3,125
Colby, L. W., No. 1 Midway-Sunset, Kern Co.	12-11-24	794	sd. sh. drlg.
Merritt-Annex Oil Co., No. 4 Midway-Sunset, Kern Co.	25-12-24	3,003	pump. 425 b.d
Standard Oil Co., No. 123-33-D Midway-Sunset, Kern	33-32-24	3,140	pump. 934 b.d.
Standard Oil Co., No. 124-33-D Midway-Sunset, Kern	33-32-24	1,482	sd. sh. drlg.
Standard Oil Co., No. 55-33-D Midway-Sunset, Kern	33-32-24	3,305	P.B. 3,110
Shell Oil Co., No. 2 McKeon, Midway-Sunset, Kern Co.	22-32-23	1,264	redrlg. 981
Linderman Oil Corp., No. 1 Midway-Sunset, Kern Co.	22-32-23	1,900	sd. sh. drlg.
U. S. Pump Co., No. 1 Midway-Sunset, Kern Co.	12-11-24	1,297	sd. sh. drlg.
Richfield Oil Co., No. 8-A Midway-Sunset, Kern Co.	6-32-23	1,309	pump. 82 b.d.
Holly Dev. Co., No. 1 Midway-Sunset, Kern Co.	22-32-23	2,326	pump. 75 b.d.
North American Oil Co., No. 5 Midway-Sunset, Kern	25-12-24	4,167	bailing
Texas Co., No. 20 Midway-Sunset, Kern Co.	32-24-24	1,952	sd. sh. drlg.
Union Oil Co., No. 5 Keene, Midway-Sunset, Kern Co.	22-32-23	1,721	sd. sh. drlg.
Hancock Oil Co., No. 6 Midway-Sunset, Kern Co.	8-11-23	2,852	sd. sh. drlg.
Valley Oil Co., No. 1 Midway-Sunset, Kern Co.	18-32-23	2,821	sd. sh. drlg.
Zamloch, Carl, No. 2 Midway-Sunset, Kern Co.	22-32-23	2,080	sd. sh. drlg.

KEY TO ABBREVIATIONS USED IN DRILLING REPORTS

Abd., abandoned.
Bldg., building.
B.D., barrels daily.
B.P., back pressure.
B.R., building rig.
Br. sh., brown shale.
B.S., basic sediment.
C.P., casing pressure.
Cd. or Crd., cored.
C.D., corrected depth.
Cg., coring.
C.L., center line.
Cmtd., cemented.
C.O., cleaning out.
Comp., completed.
Compr., compressor.
C.P., casing pressure, also cement through perforations.
Csg., casing.
D.D., drilling (or drilled) deeper.
Drlg. or Drg., drilling.
Drk. or Dk., derrick.
D.S., drill stem.
D.&A., dry and abandoned.
Fsg., fishing.
Gbo., gumbo.
G.I., gas injection.
Gr., gravity.
Gr. sd., gray sand.
Grn. sh., green shale.
Hd. sd., hard sand.
H.F.W., hole full of water.
I.P., initial production.
L., lime.
L.D.D., later drilled deeper.
Lnr., liner.
Loc., location.
M.I.M., moving in material.
M.I.R., moving in rig.
M.I.R.T., moving in rotary tools.
M.O.T., milling on tools.
O.I.H., oil in hole.
O.S., oil sand.
O.T.D., old total depth.
O.W.D.D., old well drilling deeper.
O.W.P.B., old well plugging back.
P.B., plugging or plugged back.
P.B.P., pulling big pipe.
P.L., pipe line.
P.L.O., pipe line oil.
Pmpg., pumping.
P.O.P., putting on pump.
P.P., pulled pipe.
Rd. sd., red sand.
Rd. sh., red shale.
Recmt., recemented.
Rmg., reaming.
Redrlg., redrilling.
Rng., running.
R.O.G., rig on ground.
R.P., rock pressure.
R.U., rigging up.
R.U.R., rigging up rotary.
R.U.R.T., rigging up rotary tools.
R.U.S.T., rigging up standard tools.
R.&T., rods and tubing.
S. or Sd., sand.
S.D., shut down.
Sd. sh., sandy shale.
Sdtr., or St., sidetracking.
S.D.P.L., shut down for pipe line.
S.D.W.O., shut down awaiting orders.
S.G., show gas.
Sh.&L., shale and lime.
S.I., shut in.
S.I.P., shut in, prorated.
S.L.M., steel line measurement.
S.O., show oil.
S.O.G.&W., show of oil, gas and water.
Spdg. or Spd., spudding.
S.R., straightreaming.
Stdg., standardizing (also standing).
S.W., salt water.
Swbg., swabbing.
T.A., temporarily abandoned.
Tbg., tubing.
T.D., total depth.
T.P., tubing pressure.
Tr., tract.
U.R., underreaming.
W.I.H., water in hole.
W.O., workover.
W.O.C. or W.O.C.S., waiting on cement to set.
W.P., working pressure.
W.S.O., water shutoff.
W.S.O.O.K., water shutoff O.K.
W.S.O.N.G., water shutoff no good.
W.S.R. or W.O.S.R., wait on standard rig.
Wtr., water.

Alford Oil Co., No. 8 Fried, Midway-Sunset, Kern Co.	25-12-24	2,924	sd. sh. drlg.
Quality Oil Co., No. 4 Bull, Midway-Sunset, Kern Co.	22-32-23	2,200	rig. to pump
Quality Oil Co., No. 5 Bull, Midway-Sunset, Kern Co.	22-32-23	2,041	fish. D.P.
Quality Oil Co., No. 5 W. P., Midway-Sunset, Kern Co.	27-32-23	1,918	sd. sh. drlg.
Honolulu Oil Corp., No. 46 Midway-Sunset, Kern Co.	14-32-24	3,625	completing
Petrolia Royalties, No. 1 Midway-Sunset, Kern Co.	21-32-22	1,160	rig. to pump
Evans, Hugh, No. 16 Midway-Sunset, Kern Co.	35-32-23	1,755	sd. sh. drlg.
Elk Hills Pet. Co., No. 1 Elk Hills, Kern Co.	14-31-24	7,341	sd. sh. drlg.
Reserve Oil & Gas Co., No. 33-1 Tejon, Kern Co.	33-11-19	4,969	idle
Reserve Oil & Gas Co., No. 33-2 Tejon, Kern Co.	33-11-19	4,474	flow. 25 b.d.
Reserve Oil & Gas Co., No. 33-3 Tejon, Kern Co.	33-11-19	4,431	shut in
Ohio Oil Co., No. 2 Tejon, Kern Co.	21-11-19	7,773	sd. sh. drlg.
Western Gulf, No. 3 Cantua, Fresno Co.	3-17-15	8,530	P.B. 6,500
Tide Water Assoc., No. 3 Kettleman North, Fresno	35-21-17	8,858	cleaning out
Union Oil Co., No. 2 King, Kettleman North, Fresno	29-21-17	8,500	redrlg. 7,160
K. N. D. A., No. 4-18-J Kettleman North, Fresno Co.	18-21-17	9,545	sd. sh. drlg.
K. N. D. A., No. 56-28-J Kettleman North, Fresno Co.	28-21-17	6,471	br. sh. drlg.
K. N. D. A., No. 65-28-J Kettleman North, Fresno Co.	28-21-17	7,460	cmtd. 7,459
K. N. D. A., No. 78-28-J Kettleman North, Fresno Co.	28-21-17	1,862	sd. sh. drlg.
K. N. D. A. No. 85-32-J Kettleman North, Fresno Co.	32-21-17	8,500	flow. 1,730 b.d.
K. N. D. A., No. 63-34-J Kettleman North, Fresno Co.	34-21-17	7,197	cmtd. 7,189
K. N. D. A., No. 61-4-P Kettleman North, Fresno Co.	4-22-17	7,060	br. sh. drlg.
Standard Oil Co., No. 38-33-J Kettleman North, Fresno	33-21-17	7,690	sd. sh. drlg.
Standard Oil Co., No. 81-33-J Kettleman North, Fresno	33-21-17	6,382	sd. sh. drlg.
Standard Oil Co., No. 78-3-P Kettleman North, Kings	3-22-17	7,460	sd. sh. drlg.
Central Cal. Utilities, No. 3 Dudley, Kings Co.	11-23-19	1,221	idle
Clare, A. S., No. 1 Corcoran, Kings Co.	30-20-22	576	sd. sh. drlg.
Norell, T. G., No. 1 Tulare Lake, Kings Co.	7-21-21	6,179	idle
Tri-Counties Oil Co., No. 1 Tulare Lake, Kings Co.	10-23-22	615	sd. sh. drlg.
Stone, G. S., No. 1 Tulare Lake, Kings Co.	25-20-20	1,101	sd. sh. drlg.
Tide Water Associated Oil Co., No. 2 Avenal, Kings	35-23-17	3,070	sd. sh. drlg.
Barnsdall Oil Co., No. 1 K.C.L., San Luis Obispo Co.	1-32-20	3,385	sd. sh. drlg.
Burkholder Oil Co., No. 1 Clay, San Luis Obispo Co.	14-10-26	1,597	sd. sh. drlg.
Calif. Prod. Co., No. 1 Pattiway, San Luis Obispo Co.	19-10-24	751	sd. sh. drlg.
Temblor Oil Co., No. 1 Panorama, San Luis Obispo Co.	22-32-21	651	sd. sh. drlg.
Lewis, A. O., No. 1 Pecho, San Luis Obispo Co.	34-30-10	2,350	sd. sh. drlg.
Gretna Corp., No. 1 Isley, San Luis Obispo Co.	24-30-10	100	sd. sh. drlg.
Martin, J. D., No. 4-A Pismo, San Luis Obispo Co.	5-32-13	3,300	sd. sh. drlg.
Pismo Pet. Co., No. 1 Pismo, San Luis Obispo Co.	5-32-13	3,552	sd. sh. drlg.
Texas Co., No. 1 King City, Monterey Co.	30-19-7	4,400	br. sh. drlg.
Anderson, Amil, No. 1 Cholame, Monterey Co.	15-24-14	510	sd. sh. drlg.
Shell Oil Co., No. 1 Pleyto, Monterey Co.	34-24-10	8,994	P.B. 8,750
Shell Oil Co., No. 2 Pleyto, Monterey Co.	34-24-10	7,786	sd. sh. drlg.
Texas Co., No. 2 Eureka, Humboldt Co.	22- 3-1	7,418	cleaning out
Amerada Pet. Co., No. 2 Drouin, Rio Vista, Solano Co.	36- 4-2	4,463	flow. gas
Tide Water A. O. Co., No. 1 Sargent, San Benito Co.	5-12-4	6,860	cmtd. 6,800
Buttes Oilfields, Ltd., No. 1 Kent, Sutter Co.	2-15-1	5,505	sd. sh. drlg.
Jennings, E. P., No. 1 Allensworth, Tulare Co.	4-24-23	2,709	P.B. 2,690
Standard Oil Co., No. 3 McDonald, San Joaquin Co.	24- 2-4	5,155	sd. sh. drlg.

IMPORTANT WELLS AND SOUTHERN CALIFORNIA WILDCATS

Company, well and location:	S.T.R.	Depth	Status
Richfield Oil Co., No. 5 El Segundo, Los Angeles Co.	18- 3-14	5,472	sd. sh. drlg.
Richfield Oil Co., No. 1 S. F., El Segundo, Los Angeles	18- 3-14	5,991	sd. sh. drlg.
Ohio Oil Co., No. 3 El Segundo, Los Angeles Co.	7- 3-14	6,963	sd. sh. drlg.
Texas Co., No. 2-1 El Segundo, Los Angeles Co.	17- 3-14	7,715	rig. to pump
Texas Co., No. 2 Security, El Segundo, Los Angeles	18- 3-14	2,510	sd. sh. drlg.
Republic Pet. Co., No. 6 El Segundo, Los Angeles Co.	18- 3-14	2,171	sd. sh. drlg.
Royalty Service Corp., No. 1 El Segundo, Los Angeles	7- 3-14	7,389	flow. 200 b.d.
Union Oil Co., No. 2 El Segundo, Los Angeles Co.	18- 3-14	7,350	sd. sh. drlg.
Signal Finance Co., No. 1 Hawthorne, Los Angeles Co.	10- 3-14	9,395	cleaning out
C. C. M. Oil Co., No. 15 Torrance, Los Angeles Co.	31- 3-14	4,361	hd. sh. drlg.
Abrams, John, & Assoc., No. 1 Torrance, Los Angeles	16- 4-14	4,351	sd. sh. drlg.
Calmore Oil Co., No. 1 Torrance, Los Angeles Co.	31- 3-14	5,185	hd. sd. drlg.
Swyer Oil Co., No. 1 Torrance, Los Angeles Co.	18- 4-14	4,330	cleaning out
McLaren & Assoc., No. 1 Palos Verdes, Los Angeles	27- 4-14	3,992	redrlg. 1,765
Standard Oil Co., No. 83 Inglewood, Los Angeles Co.	8- 2-14	1,920	sd. sh. drlg.
Shell Oil Co., No. 89 Reyes, Dominguez, Los Angeles	33- 3-13	7,550	sd. sh. drlg.
Shell Oil Co., No. 90 Reyes, Dominguez, Los Angeles	33- 3-13	8,751	O.S. drlg.
Shell Oil Co., No. 91 Reyes, Dominguez, Los Angeles	33- 3-13	981	idle
Union Oil, No. 50 Callender, Dominguez, Los Angeles	33- 3-13	10,435	sd. sh. drlg.
Union Oil, No. 52 Callender, Dominguez, Los Angeles	33- 3-13	3,925	test W.S.O.
Union Oil, No. 53 Callender, Dominguez, Los Angeles	33- 3-13	7,550	flow. 2,160 b.d.
Union Oil, No. 9 Carson, Dominguez, Los Angeles Co.	33- 3-13	7,555	flow. 468 b.d.
Union Oil, No. 46 Hellman, Dominguez, Los Angeles	33- 3-13	4,281	sd. sh. drlg.
Shell Oil Co., No. 1 Rosecrans, Los Angeles Co.	20- 3-13	7,744	P.B. 7,602
Barnsdall Oil, No. 12 O'Dea, Rosecrans, Los Angeles	18- 3-13	4,672	sd. sh. drlg.
Union Oil Co., No. 16 Rosecrans, Los Angeles Co.	18- 3-13	530	sd. sh. drlg.
Union Oil, No. 17 D.R., Playa Del Rey, Los Angeles	27- 2-15	4,521	sd. sh. drlg.
Burt, A. G., No. 1 Newhall, Los Angeles Co.	36- 4-17	852	sd. sh. drlg.
Holbrook Oil Co., No. 1 Newhall, Los Angeles Co.	28- 4-16	5,055	br. sh. drlg.
Sunrise Oil Co., No. 1 Wilmington, Los Angeles Co.	28- 4-13	2,180	sd. sh. drlg.
General Pet., No. 1 Ford, Wilmington, Los Angeles	4- 5-13	2,986	sd. sh. drlg.
General Pet., No. 2 Ford, Wilmington, Los Angeles	4- 5-13	3,590	flow. 2,147 b.d.
General Pet., No. 3 Ford, Wilmington, Los Angeles	4- 5-13	2,500	sd. sh. drlg.
General Pet., No. 4 Ford, Wilmington, Los Angeles	4- 5-13	2,590	sd. sh. drlg.
General Pet., No. 5 Ford, Wilmington, Los Angeles	4- 5-13	2,460	sd. sh. drlg.
General Pet., No. 2-P Wilmington, Los Angeles	4- 5-13	2,430	sd. sh. drlg.
Getty Oil Co., No. 5 Wilmington, Los Angeles Co.	33- 4-13	3,585	sd. sh. drlg.
Getty Oil Co., No. 7 Wilmington, Los Angeles Co.	33- 4-13	2,520	sd. sh. drlg.
Burnoel Pet. Co., No. 960 Wilmington, Los Angeles	33- 4-13	2,108	sd. sh. drlg.
Westport Oil Co., No. 6 Wilmington, Los Angeles Co.	33- 4-13	2,140	sd. sh. drlg.
Bankline Oil, No. 12-P.T., Wilmington, Los Angeles	34- 4-13	1,955	sd. sh. drlg.
Bankline Oil, No. 13-D Wilmington, Los Angeles Co.	34- 4-13	3,080	sd. sh. drlg.
Pongratz Oil Co., No. 1 Wilmington, Los Angeles Co.	33- 4-13	2,601	sd. sh. drlg.
Union Pacific R.R., No. 3 Wilmington, Los Angeles	4- 5-13	3,537	flow. 785 b.d.
Union Pacific R.R., No. 5 Wilmington, Los Angeles	4- 5-13	3,512	cmtd.
Union Pacific R.R., No. 7 Wilmington, Los Angeles	4- 5-13	2,180	sd. sh. drlg.
Union Pacific R.R., No. 8 Wilmington, Los Angeles	33- 4-13	2,721	sd. sh. drlg.
Union Pacific R.R., No. 18 Wilmington, Los Angeles	4- 5-13	1,930	sd. sh. drlg.
Ring Oil Co., No. 1 Wilmington, Los Angeles Co.	5- 5-13	3,725	flow. 400 b.d.
Royalty Service, No. 3-C Wilmington, Los Angeles	5- 5-13	2,720	sd. sh. drlg.
Royalty Service, No. 4-C Wilmington, Los Angeles	33- 4-13	2,980	sd. sh. drlg.
Royalty Service, No. 1-B Wilmington, Los Angeles	33- 4-13	2,586	sd. sh. drlg.
Royalty Service, No. 1-N Wilmington, Los Angeles	4- 5-13	612	sd. sh. drlg.
Graham-Loftus Oil, No. 1 Wilmington, Los Angeles	33- 4-13	2,320	sd. sh. drlg.
Gauthier Oil Co., No. 2 Wilmington, Los Angeles Co.	27- 4-13	3,740	circulating
Wilmington Oil Dev., No. 3 Wilmington, Los Angeles	33- 4-13	1,995	sd. sh. drlg.
Drillers, Inc., No. 1 Whittier, Los Angeles Co.	22- 2-11	1,654	idle
Richfield Oil, No. 1 Estrada, Montebello, Los Angeles	5- 2-11	4,173	fish. bailer
Texas Co., No. 16 Baldwin, Montebello, Los Angeles	6- 2-11	5,798	sd. sh. drlg.
St. Helens Pet., No. 6 P.&B., Montebello, Los Angeles	5- 2-11	7,199	tested; wet
Union Oil Co., No. 26 Montebello, Los Angeles Co.	1- 2-12	4,267	sd. sh. drlg.
Universal Consd., No. 1-F Montebello, Los Angeles	5- 2-11	2,140	sd. sh. drlg.
Texas Co., No. 13-H.K., Long Beach, Los Angeles Co.	19- 4-12	3,265	P.B. 3,232
Hilltop Oil Co., No. 1 Long Beach, Los Angeles Co.	19- 4-12	2,850	sd. sh. drlg.
Caltana Corp., No. 1 Artesia, Los Angeles Co.	11- 4-12	2,372	sd. sh. drlg.
Hathaway, No. 2 Fulton, Santa Fe Springs, L. Angeles	6- 3-11	4,180	cleaning out
Union Oil Co., No. 100 Santa Fe Springs, Los Angeles	6- 3-11	10,789	fish. D.P.
Julian & Criswell, No. 1 Walnut, Los Angeles Co.	5- 2-9	1,450	hd. sh. drlg.
Re-Mine Oil Co., No. 2 Huntington, Orange Co.	2- 6-11	4,570	rig. to pump
Texas Co., No. 8 Brown, Huntington, Orange Co.	11- 6-11	4,148	sd. sh. drlg.
West American, No. 14 Huntington, Orange Co.	34- 5-11	1,952	sd. sh. drlg.
Orco Oil Co., No. 5 Huntington, Orange Co.	2- 6-11	4,697	redrlg. 1,761
Union Oil Co., No. 10-C Huntington, Orange Co.	34- 5-11	2,701	sd. sh. drlg.
Union Oil Co., No. 24-C Huntington, Orange Co.	34- 5-11	4,292	sd. sh. drlg.
Commander Oil Co., No. 1 Newport, Orange Co.	29- 6-10	6,690	br. sh. drlg.
Fullerton Oil Co., No. 20 Brea, Orange Co.	2- 3-10	5,483	rig. to pump
Standard Oil Co., No. 63 Emery, West Coyote, Orange	24- 3-11	3,525	sd. sh. drlg.
Hogan Pet., No. 1 McNally, West Coyote, Orange Co.	23- 3-11	3,798	sd. sh. drlg.
Bandini Petroleum Co., No. 1 East Coyote, Orange Co.	17- 3-9	2,855	cleaning out
Tide Water A. O. Co., No. 52 East Coyote, Orange Co.	13- 3-10	3,650	rig. to pump
Standard Oil Co., No. 2-8 East Coyote, Orange Co.	22- 3-10	4,325	sd. sh. drlg.
Shell Oil Co., No. 1 Mathis, Anaheim, Orange Co.	23- 4-10	5,065	sd. sh. drlg.
Joseph, Arthur, No. 1 Richfield, Orange Co.	29- 3-9	3,731	sd. sh. drlg.
Union Oil Co., No. 8 Coyle, Richfield, Orange Co.	29- 3-9	3,431	pump. 190 b.d.

KANSAS

Week Ending April 17 (Descriptions are East unless marked otherwise)

Barton County

S. E. Bailey No. 1 Hammeke, NE NE SW sec. 12-18-12w. O.W.D.D.; C.O. 2,100 ft.

C. L. Carlock No. 1 Ehly, NE NE SE sec. 5-18-11w. Drlg. 2,500 ft.

Vickers Pet. Co. et al No. 1 Leibel, SE NE SE sec. 18-18-11w. Drlg. 2,220 ft.

George Dickey et al No. 1 Boger, SE SE NE sec. 15-16-13w. Anhy. 826 ft.; drlg. 1,270 ft.

Hendon Drlg. Co. and Morgan & Flynn No. 1 Robenseifer, C NW sec. 7-18-15w. U.R. 12-in. at 1,076 ft.

Indian Terr. Illm. Oil Co. No. 1 Schrapel, SE SE NE sec. 26-20-11w. Sil. 3,295 ft. (cor.); T.D. 3,325 ft.; acd.; P. 824 B.O. in 12 hrs.

C. L. Price et al No. 1 Kraft, SW NW NE sec. 10-17-11w. K.C. 2,990 ft.; pay 3,224-26 ft.; S.O.&W.; U.R. 7-in.

Stanolind O. & G. Co. No. 1 Meggars, SW cor. sec. 21-20-11w. Drlg. 927 ft.

E. F. Wakefield et al No. 1 Scheuerman, NE NE SW sec. 31-16-15w. Set 10-in. 1,083 ft.; drlg. 1,090 ft.

C. H. Weaver et al No. 1 Stumps, NE cor. sec. 3-17-12w. Anhy. 748 ft.; T.D. 754 ft.

Ralph Wixson and Union O. & G. Co. No. 1 Frederick, NW cor. sec. 12-16-13w. Anhy. 862 ft.; drlg. 2,805 ft.

Butler County

A. M. Landon et al No. 1 McCaig, NE NE SE sec. 13-28-6. Sd. 2,720-40 ft.; P.B. to 2,737 ft.; swb. 100 B.O. in 24 hrs.

Sid Neff et al No. 1 Church, SW NE SE sec. 8-28-5. O.W.D.D.; drlg. 1,520 ft.

C. L. Seibel et al No. 1 Bisagno, SE SE NW sec. 24-25-6e. Drlg. 1,940 ft.

Vickers Pet. Co. No. 1 Voth, C N½ NE NE sec. 32-24-4e. Drlg. 1,980 ft.

Chautauqua County

Ira Scott et al No. 1 Lamba, SW NW NE sec. 18-33-13. Drlg. 1,355 ft.

E. J. Shaffer No. 1 Nuckolls, NW cor. sec. 12-33-19. U.R. 10-in. at 900 ft.

W. M. McKnabb No. 1 Griffith, SW cor. sec. 11-32-10. K.C. 1,320 ft.; drlg. 1,323 ft.

Cowley County

Bess & Gralapp et al No. 1 Wakefield, NE SE SW sec. 18-30-6. Spd.

Elmer Ash et al No. 1 Bolack, NW NW SE sec. 22-32-6. Spd.

Tom Palmer No. 1-A Lowe, SW SE SE sec. 3-32-5. Drlg. 2,500 ft.

Ryan Consolidated Co. No. 1 Couch, SW SW SE sec. 13-30-5. Drlg. 2,418 ft.

Decatur County

C. L. Bruce et al No. 1 Newbold, C NE SE sec. 34-2s-28w. R.U.R.

Edwards County

Royal Pet. Co. et al No. 1 Krupp, NW NW SE sec. 18-24-19w. Anhy. 1,366 ft.; fsg. 2,603 ft.

Elk County

L. H. Wentz et al No. 1 Love, SW SE NE sec. 35-30-9. K.C. 1,600 ft.; drlg. 1,690 ft.

Ellis County

Billings No. 1 Smith, SE SE NW sec. 14-12-16w. Spd.

Bridgeport Machine Co. et al No. 1 Froelick, NW NW SE sec. 4-13-16w. Drlg. 2,040 ft.

Elwell and Tree Oil Co. No. 1 Wickham, SW SW NE sec. 10-11-19w. R.U.R.

Ted Kors et al No. 1 Koblitz, SE SW NW sec. 23-12-18w. Pay 3,694-98 ft.; swb. 48 B.O. and swbd. down; T.D. 3,699 ft.; P.B. 3,697½ ft.; P. 13 B.O. and pumped off.

Lario O. & G. Co. et al No. 1 Henderson, SW SW NE sec. 27-11-18w. Drlg. 1,215 ft.

Murphy Oil Co. No. 1 Wiesner, SE SE SW sec. 12-14-19w. U.R. 8-in. at 3,470 ft.

J. J. Muth No. 1 Penney, NW SE SE sec. 29-14-18w. Spd. and S.D.

Noble Pet. Corp. No. 1 O'Laughlin, NW NW SE sec. 13-12-19w. Anhy. 1,550 ft.; drlg. 2,985 ft.

Earl Wakefield No. 1 Putnam Mortgage Co., SE SE NW sec. 32-15-17w. Anhy. 1,019 ft.; Topeka 2,875 ft.; S.S.O. 2,910-17 ft.; drlg. 3,000 ft.

Ellsworth County

Frost et al No. 1 Dolechek, NE NE SW sec. 36-14-8w. H.F.W. 2,585 ft.; U.R. at 2,605 ft.

Orville Lea No. 1 Larkin, NW cor. sec. 15-16-8w. S.D. 150 ft.

Finney County

Keith & Olson Drlg. Co. No. 1 Ely, NW NW SW sec. 34-22-29w. Viola 5,315 ft.; drlg. 5,502 ft.

Greenwood County

L. S. Bolwanz No. 1 Travelers, C SW SW sec. 23-26-10. Drlg. 1,650 ft.

Ohio Oil Co. No. 1 Schwab, SE SW SE sec. 9-24-10. Viola 2,763-66 ft., acd.; P. 9 B.O. and 85 B.W. in 24 hrs.

Dr. Shippey No. 1 Boone, NE NE NW sec. 21-26-12. O.W.D.D.; S.D. 1,868 ft.

Shull Drlg. Co. No. 1 Cannon, NE SE NE sec. 23-25-12. Drlg. 1,100 ft.

Harper County

Carter Oil Co. et al No. 1 Seihart Est., C SW NW sec. 4-34-8w. Drlg. 4,430 ft.

Harvey County

Harburney Oil Co. No. 1 Schrag, NW NW SE sec. 24-22-3w. Viola 3,695 ft.; Wilcox 3,711 ft.; fsg.

Kearny County

J. L. Murphy No. 1 Campbell, NW NW SW sec. 32-25-35w. Anhy. 1,900 ft.; set 7-in. csg. at 2,780 ft.; 1,500,000 ft. gas.

J. L. Murphy No. 1 Masonic Home, C NW sec. 1-26-36w. R.U.R.

Logan County

W. H. Boucher No. 1 Wright, C SE SE sec. 12-15-35w. Fsg. 4,025 ft.

Lyon County

Davis & Sory No. 1 Byrd, SW SW SE sec. 32-21-11. R.U.M.

Young et al No. 1-A Murphy, SE NW NE sec. 32-21-11. Fsg. 1,380 ft.

McPherson County

Bradley Bros. No. 1 Barnholt, SW SW SE sec. 30-20-5w. Drlg. 1,480 ft.

Fred C. Frank et al No. 1 Doles, SE NW NE sec. 12-19-1w. S.D. 600 ft.

Hutchinson O. & G. Co. et al No. 1 Berg, SW SW SE sec. 15-20-3w. Chat 3,082 ft.; S.O. 3,098-3,105 ft.; H.F.W. 3,235 ft.

Smith et al No. 1 Larson, NW NW SW sec. 35-18-5w. R.U.

Wamhoff et al No. 1 Nuse, SE NE SW sec. 18-18-4w. Set 10-in. 110 ft.; W.O.C.

Mitchell County

Geo. Siedhoff et al No. 1 Greiss, SW SW SE sec. 16-8-10w. U.R. 8-in. at 2,660 ft.

Ness County

Jones & Lane No. 1 Page Milling Co., SE SE NW sec. 36-18-26w. Rlg.

Newton Dev. Co. No. 1 Tenny, NW NW SE sec. 19-18-25w. H.F.W. 4,100-10 ft.; U.R. 6-in.

Osborne County

J. E. Waldron No. 1 Neuschwanger, SE NE NW sec. 11-8-14w. Spd. and S.D.

Pawnee County

Capshaw et al No. 1 Riederer, C W½ NW SE sec. 29-21-19w. Anhy. 1,145 ft.; set 10-in. 900 ft.; W.O.C. at 1,173 ft.

Reno County

Atlantic Ref. Co. No. 1 Page, SE NW NW sec. 19-23-7w. Drlg. 3,745 ft.

Imo O. & G. Co. and others No. 1 Watkins, SE cor. sec. 14-22-7w. Drlg. 550 ft.

Clyde Pulse No. 1 Payne, SW NW SE sec. 4-22-7w. Cong. 3,398 ft.; Chat. 3,426 ft.; H.F.W. 3,440 ft.; T.D.; P.B. 3,287 ft.; acd. and re-acd.; P. 245 B.O. in 20 hrs.; 5 B.O.P.H. after head.

Olson Drlg. Co. et al No 1 Herriman, NW cor. sec. 22-24-8w. Chat 3,754 ft.; drlg. 3,860 ft.

Sinclair Prairie Oil Co. No. 1 Natt, NW NW SE sec. 32-26-4w. Drlg. 1,240 ft.

Westgate-Greenland Oil Co. No. 1 O'Sullivan, SW SW NE sec. 24-23-5. Set 8-in. at 3,385 ft.; R.U.S.T.

Rice County

L. E. Douglass No. 1 Coyne, NE SE SE sec. 24-21-8w. S.D. 2,415 ft.

Hanna et al No. 1 Brothers, SE SE NW sec. 25-20-8w. Viola 3,588 ft.; drlg. 3,640 ft.

John Hanna et al No. 1 Fulton, NW NW NE sec. 24-10-6w. Rng. 8-in. 2,616 ft.

Hipple et al No. 1 Wernet, NE NE NW sec. 11-20-6w. Spudded.

T. C. Johnson No. 1 Shubert, SW cor. sec. 9-20-10w. Simpson 3,373 ft.; set 5-in. 3,380 ft.; 2,150 ft. wtr. and 250 ft. O.I.H.

Fred Phillips et al No. 1 Hubenett, SW NW SW sec. 23-20-6w. Drlg. 2,430 ft.

Skelly Oil Co. & Ewers Simpson Oil Corp. No. 1 Linville, SW NW NE sec. 2-20-10w. K.C. 3,008 ft.; Simp. 3,295 ft.; Sil. 3,315-27 ft.; run 7-in.

C. E. W. Skiles et al No. 1 Helmer, NW NW NE sec. 7-19-18w. R.U.
Union Oil & Refining Co. et al No. 1 Baker, SW SW NE sec. 33-20-6w. Drlg. 2,115 ft.
W. E. Witt et al No. 1 Fair, NW SE SE sec. 4-22-8w. S.D. 1,890 ft.

Rooks County

Basin Oil Co. No. 1 Baxa, NE cor. sec. 23-9-17w. Drlg. 2,960 ft.
Brunson Drlg. Co. et al No. 1 Casey, SE SE NE sec. 22-9s-16w. R.U.
Buckner & Schoff No. 1 McConnel, NE cor. sec. 34-6s-18w. Drlg. 3,365 ft.
Graham et al No. 1 Fike, SW cor. sec. 9-9-17w. T.D. 3,301 ft.; R.U.; D.D.
S. C. Hoel et al No. 1 Ives, SW SW NE sec. 11-7-18w. R.U.
Jones Bros. No. 1 Wiss, NW cor. sec. 8-10-18w. Anhy. 1,620 ft.; drlg. 2,633 ft.
J. H. Lester No. 1 Methene, SE SE NE sec. 29-10-20w. Drlg. 3,526 ft.
Phillips Pet. Co. No. 1 Mainquist, SW SW NW sec. 9-9-17w. Anhy. 1,348 ft.; drlg. 1,880 ft.
Snowden & McSweeney No. 1 Hindman, C E½ NW sec. 35-7s-17w. H.F.W. 3,180 ft., T.D.; P.B. to 3,118 ft.; P. 20 B.P.D.
Twin Drlg. Co. No. 1 Doughty, SW cor. sec. 15-8-19w. O.W.D.D.; Sil. 3,438 ft.; S.S.O. 3,470 ft.; H.F.W. 3,490 ft.

Rush County

Duwe & Brouk No. 1 Lebsack, SE SE NE sec. 13-16-16w. R.U.
S. A. Murphy et al No. 1 Roth, NW NW SW sec. 21-16-18w. Anhy. 1,159 ft.; T.D. 2,605 ft. (cor.); est. 15,000,000 ft. gas.

Russell County

Equity Gas Co. No. 1 Harbaugh, NW NE SW sec. 19-13-12w. S.D. 1,500 ft.
Goldstein and Vernon Oil & Gas Co. No. 1 Steinert Estate, NE SE NW sec. 34-15-15w. Spd. and S.D.
S. M. Murphy et al No. 1 Deines, SE SE SW sec. 36-15-15w. Fsg. 1,910 ft.

Sedgwick County

Cameron et al No. 1 Smith, SW SE SE sec. 13-27-2e. U.R. 5-in. at 3,087 ft.
Empire O. & R. Co. No. 1 Kimel, NW cor. sec. 4-29-2w. Chat 3,648 ft.; S.S.O. 3,695-98 ft.; fsg. 3,880 ft.
Roxana Drlg. Co. et al No. 1 Woodman, SW NW SW sec. 26-26-1w. Drlg. 2,372 ft.
E. B. Shawver No. 1 Furman, SW NE SE sec. 24-29-3w. Drlg. 1,310 ft.
E. M. Swearer et al No. 1 Thome, SW SW NW sec. 19-28-1w. T.D. 3,455 ft.; est. 5 B.F.P.H.

Stafford County

Empire O. & R. Co. No. 1 O'Connor, NE cor. sec. 17-24-15w. Drld. cmt. to 4,131 ft.
W. P. Faulkner No. 1 Schulz, SE SE NE sec. 6-22-13w. Rlg.

Sumner County

Graham et al No. 1 Dawson, NW NW NW sec. 4-33-2w. S.D. 4,212 ft.
Olson Drlg. Co. et al No. 1 Barr, SE cor. sec. 8-34-2w. Drlg. 4,358 ft.
E. B. Shawver et al No. 1 Bryan, C W½ W½ SW sec. 36-30-2w. Chat 3,753 ft. (cor.); drlg. 3,781 ft.
Texas Co. No. 1 Harper, NE SW SE sec. 9-20-3w. K.C. 3,208 ft.; drlg. 3,625 ft.

Woodson County

Harper et al No. 1 Miller, NW NE SE sec. 10-24-14. Drlg. 1,100 ft.
Kansas O. & G. Corp. No. 1 Providence, SW SW SE sec. 6-24-15. Drlg. 500 ft.
Katz No. 1 Guy, SW SW SE sec. 6-24-15 Fsg. 500 ft.
Reed et al No. 1 Piper, NW NW SE sec. 19-23-15. L. 1,535 ft.; T.D. 1,575 ft.; est. 10 B.O.P.D.
C. V. Morris No. 1 Young, SE NE SE sec. 24-3n-10w. Drlg. 985 ft.
Frank Scott No. 1-A Kuntz, SE NE SE sec. 21-4n-11w. T.D. 2,338 ft.; reaming hole.

Jefferson County

Buffalo Oil Co. No. 1 Crownover, SE SE NW sec. 21-6s-6w. T.D. 2,591 ft.; U.R. csg.
Dodson, Wells-Pierson No. 1 Key, SE SE NW sec. 6-8s-6w. Drlg. 2,904 ft.
Gulf Oil Corp. No. 1 Woodworth, NW NW NE sec. 20-3s-4w. Drlg. 1,450 ft.
Heenan & Coe et al No. 1 Rose, C SW SW sec. 1-5s-5w. R.U.R.
Massad & Swansberger No. 1 Barrett, NE cor. SE SE sec. 14-6s-6w. Drlg. 1,800 ft.

Johnston County

Patton et al No. 1 McCrummens, SW SW NE sec. 16-1s-6e. T.D. 1,155 ft.; S.D.

Love County

Sinclair Prairie Oil Co. No. 1 Stockton, SE SE SW sec. 26-6s-2w. T.D. 8,583 ft.; P.B. 6,927 ft.; fsg. for tubg. at 5,288 ft.

Marshall County

Paul R. Robb No. 1 Vittitoe, C NE SE sec. 11-5s-4e; T.D. 5,461 ft.; D.&A.
Stuart & Taylor No. 1 Chestnut, NE cor. sec. 23-8s-5e. T.D. 803 ft.; P. 100 bbls. fluid, est. 50 per cent wtr.; pulling tubing and rods.

Murray County

O. O. Owens No. 1 Fryer, NE SE NE sec. 34-1s-3e. Drlg. 40 ft.
Power Oil Co. et al No. 1 Lancaster Trust, C SW NE sec. 10-1s-2e. T.D. 3,438 ft.; P.B. to 3,175 ft.; W.O.C.
J. Ben Russell No. 1 fee, SE SE NW SE sec. 9-2s-3e. T.D. 1,586 ft.; S.D.

Stephens County

William Angle No. 1 Posey, C NW NW sec. 8-1n-8w. T.D. 5,504 ft.; contract depth; S.D.
Carter Oil Co. No. 1 Harley, C NE NE sec 24-2s-4w. Drlg. 4,493 ft. in lime.
H. J. Edwards No. 1 Frederick, SW cor. NE SE NW sec. 31-2n-8w. T.D. 2,754 ft.; S.D.
Helmerich & Payne No. 1 Graham, SW SW NE sec. 12-1n-5w. T.D. 5,014 ft.; cementing off gas.
B. F. Lundy No. 1 Calmes, NW SW SE sec. 35-1n-4w. Odor of gas, 3,123-25 ft.; drlg. 3,275 ft.
Charles Newsom No. 1 Pfile, SW cor. sec. 1-2s-7w. Spudded and S.D.
Geo. L. Pace et al No. 1 Tah-Su-Dah, SE NW SW sec. 27-1s-9w. Drlg.
Ed Parson No. 1 Olson, C SW SW sec. 21-2n-8w. T.D. 7,002 ft.; D.&A.

Tillman County

Magnolia Pet. Co. No. 1 Brown, SW SE NE sec. 21-3s-18w. Drlg.

OKLAHOMA

Week Ending April 17

NORTHERN OKLAHOMA

Alfalfa County

Olson Drlg. Co. et al No. 1 Acre, C SW NE sec. 14-24-11w. O.W.P.B.; bailing at 3,600 ft.

Beckham County

Mid-American Oil Co. No. 1-A Biscoe, SW cor. sec. 28-8-22w. Drlg. 1,272 ft. in shale.

Caddo County

Clyde Becker et al No. 1 Pharris, SE SE NW sec. 24-6-12w. Tools on ground.

Cleveland County

W. R. Hollenbeck No. 1 Norman, NW NW NE sec. 17-9-2w. Drlg. 4,025 ft.

Creek County

M. W. Mosier et al No. 1 Holcomb, SE SW NW sec. 19-18-8. S.D. 2,935 ft.
Comail Oil Co. et al No. 1 Hall, SW SW NE sec. 2-15-7. Wilcox 3,999 ft.; drlg. 4,020 ft.

Garfield County

Arab Oil Co. No. 1 Harkendorf, NE cor. sec. 34-20-3w. Sylvan 5,710 ft.; Viola, 5,740 ft.; drlg. 5,769 ft.
Ohio Oil Co. No. 1 State, SW cor. sec. 13-23-3w. Est. 5,000,000 ft. gas at 990-1,010 ft.; drlg. 1,470 ft.

Grady County

Western White Lily Oil Co. No. 1 Stover, SE SW NW sec. 33-3n-7w. Drlg. 2,758 ft.

Haskell County

Continental Oil Co. No. 1 Anderson, SW SE NE sec. 33-8-20. R.U.R.

Harmon County

Penn State Oil Co. No. 1 Cole, C W½ SW NW sec. 21-2n-26w. Cd. 2,675-93 ft.; oil stained in top, show of dead oil; drlg. 3,000 ft. in lime.

Hughes County

C. J. Wrightsman No. 1-A Diamond, NE NE SE sec. 33-9-9. First Wilcox 4,246-58 ft., S.S.O.; 2nd Wilcox 4,279½-80 ft.; T.D.; P.B. 3,420 ft.; W.O.C.

Kay County

Fortuna Oil Co. No. 1-A Harris, SW SW NE sec. 14-25-1e. S.D. at 383 ft.
Higdon et al No. 1 Nieman, NE NW NE sec. 9-26-3e. Drlg. 200 ft.

Kiowa County

Argus Pet. Co. No. 1 Osborne, NW cor. NE sec. 9-7-16w. T.D. 1,240 ft. in sd.; S.O.; S.D. for csg.
Kiowa Oil Corp. No. 1 Finder, C SW NE sec. 4-6-20w. Spudded.

Latimer County

Clark Drlg. Co. et al No. 1 Wilson, C SE SE sec. 15-5-18. T.D. 4,592 ft.; S.D. for repairs.

Le Flore County

Lynch et al No. 1 Tidwell, C NW SE sec. 17-3n-22. Set 8-in. 2,340 ft.; U. R.

Logan County

Anthony & Marshall No. 1 Fruin-Eckman, SE SE SW sec. 4-16-1e. S.D. 4,975 ft.
Eason Oil Co. et al No. 1 Sisters, SW cor. sec. 24-17-1w. Drlg. 1,732 ft.
Helmerich & Payne et al No. 1 Randall, SW SW NW sec. 24-16-1w. R.U.R.
Helmerich & Payne et al No. 1 Ruck, C NE SE sec. 9-19-2w. Wilcox 5,425 ft.; T.D. 5,442 ft. D.&A.

Noble County

Lincoln Oil Co. et al No. 1-A Neil, NE cor. sec. 15-23-2w. Layton 3,695 ft.; drlg. 4,215 ft.
Magnolia Pet. Co. No. 1 Forsythe, SE SE SW sec. 23-21-2w. Rig.

Okfuskee County

Mid-Continent Pet. Corp. No. 1 Gofford, NE NE NW sec. 35-12-7e. Cromwell 3,825 ft.; coring 3,845 ft.

Osage County

Bay Oil Corp. No. 1 Osage, NW cor. sec. 35-24-7. Drlg. 1,960 ft.
Norbla Oil Co. No. 1 Osage, NE NE SW sec. 13-23-6. Rig; R.U.S.T.

Payne County

Bill Riddle No. 1 Van Zandt, NW NW SE sec. 16-18-3e. Cellar and pits.

Pontotoc County

E. H. Moore et al No. 1 Muse, SW NE SE sec. 33-2n-7. T.D. 5,253 ft.; P.B. to 4,570 ft.; acd.; flwd. 102 B.O. in 24 hrs.

Pottawatomie County

Champlin Ref. Co. No. 1 Buckler, SE NE NE sec. 7-6-4e. Wilcox 4,771 ft.; T.D. 4,783 ft.; D.&A.
Mid-Continent Pet. Corp. No. 1-A Logan, NE NE SE sec. 31-11-5. Viola, 4,762 ft.; drlg. 4,775 ft.

Pushmataha County

Erle Halliburton et al No. 1 Bagwell, SW NE NE sec. 30-3s-15e. T.D. 1,293 ft.; S.D.

Seminole County

Amerada Petroleum Corp. and Stanolind Oil & Gas Co. No. 1 Reed, SE SW SE sec. 19-10-8. Drlg. 1,972 ft.
J. E. Hall et al No. 1 White, SE NW SE sec. 30-6-8. T.D. 2,610 ft.; P.B. 1,275 ft.; bailer stuck.
J. H. Hudson et al No. 1 Tanyan, SE SE SW sec. 32-10-7. First Wilcox 4,630 ft.; T.D. 4,632½ ft., wtr.; D.&A.
Sinclair Prairie Oil Co. No. 1 Rossanna, NW NW SW sec. 28-10-8. Wilcox 4,176 ft.; T.D. 4,187 ft.; est. 125 to 150 B.O. P.D.; may deepen.
A. I. Spears No. 1 Keaton, NW cor. sec. 6-5-8. R.U.R.

Texas County

Cabot Carbon Co. No. 1 Calvert, C sec. 14-3n-16ecm. Set 7-in. 2,500 ft.; T.D. 2,540 ft.
Cabot Carbon Co. No. 1 Castro, C SE sec. 19-3n-17ecm. T.D. 2,570 ft.; 3,600,000 ft. gas at 2,690 ft.; plugging back.
Missouri Valley Gas Corp. No. 1 well, C sec. 17-6n-14ecm. Drlg. 2,257 ft.

Washita County

John Koberg No. 1 Harms, NW NW NE sec. 6-10-16w. Drk.
L. P. McWhirter No. 1 fee, NW SW SW sec. 34-8-19w. Drlg. 1,779 ft.

SOUTHERN OKLAHOMA

Atoka County

A. J. Sanders No. 3 Redden, SE SW SW sec. 19-1n-15e. T.D. 1,260 ft. (cor.); S.D.

Carter County

Lyle-Wham Dev. Co. No. 1 Jackson, NE SW SW sec. 26-5s-1e. T.D. 881 ft.; Abd.

Comanche County

E. B. Hane No. 1 Duper, NW cor. sec. 21-2n-13w. S.D. 250 ft. for csg.

LOUISIANA

NORTH LOUISIANA PROVEN

Caddo—Rodessa

Drillers, Inc., No. 1 Glassell-Means, SW NE SE sec. 9-23-15. Drlg. 3,767 ft.
Gulf Oil No. 1 Campbell, C sec. 4-23-16. Drlg. 5,935 ft.
J. Edw. Jones No. 2-B Sharp, NW C sec. 4-23-16. Drlg. 5,703 ft.
J. Edw. Jones No. 4-A Sharp, SE C sec. 4-23-16. Drlg. 5,642 ft.
Lion Oil Rfg. No. 1 Holm, NW SE SE sec. 9-23-15. Drlg. 5,898 ft.
Lyons & Neely No. 1 Noel, SE cor. sec. 8-23-15. Gas well; put on gauge.
Lyons & Neely No. 2 Noel, SW SE SE sec. 8-23-15. 7-in. cmt. 5,881 ft.; T.D. 5,930 ft.; W.O.C.S.
Magnolia Pet. Co. No. 11-A Caddy Lvy. Bd., SW cor. sec. 21-23-16. 7-in. cmtd. 5,947 ft.; T.D. 5,980 ft.; W.O.C.S.
Marr et al No. 5 Hunter, sec. 13-23-16. O.W.D.D.; cg. 7,020 ft.
R. W. Norton No. 2 L. C. Harden, 585 ft. E. 656 ft. N. SW cor. 56-ac. tr., sec. 20-23-16. Drlg. 4,719 ft.
R. W. Norton No. 3 L. C. Harden, SW sec. 17-23-16. Drk.
R. W. Norton No. 1 Payne, C SE SE sec. 27-23-16. Cg. 9,075 ft.
R. W. Norton No. 4 Starke, 1,980 ft. N. 660 ft. E, SW sec. 16-23-16. Drlg. 5,397 ft.
Standard Oil of La. No. 2 Armistead Comm., SE SE SW sec. 4-23-16. Comp; flw. 336 B.P.D.; T.D. 6,039 ft.
Standard Oil Co. No. 1 L. J. Kaempfer, SE sec. 9-23-16. Drlg. 5,138 ft.
Standard Oil Co. No. 1 Sarah Kaempfer, NW NW NE sec. 9-23-16. Drlg. 4,860 ft.
Standard No. 1 W. M. Terry, SE NE SW sec. 9-23-16. T.D. 5,975 ft.; tstg.
United Gas No. 6 fee 574, SW NE NW sec. 16-23-16. Drk.
United Gas No. 9 Bremer Unit, SW sec. 22-23-16. Drlg. 1,700 ft.
United Gas No. 1 A. B. Land Unit, NW sec. 32-23-16. Drlg. 4,152 ft.
United Gas No. 1 Starke, SE SW sec. 9-23-16. Drlg. 4,136 ft.
United Gas No. 5 Young, NW sec. 27-23-16. Cg. 6,510 ft.

N. LOUISIANA WILDCATS

Bienville Parish

Lide & Greer No. 1 W. J. Smelley, SE NW SW sec. 18-16-4w. Drlg. 2,637 ft.
McDowell et al No. 1 Locke, NE cor. sec. 9-15-10. S.D. 2,568 ft. (cor.).

Bossier Parish

Arkansas-La No. 2-B Werner, NE cor. sec. 7-17-11. Loc.
Arkansas-La. No. 1 Tom Wilson, SW sec. 8-17-11. T.D. 4,274 ft.; 7-in. cmtd. 4,074 ft.
Haynes Drlg. Co. No. 1 A. J. Murff, NE SE sec. 35-17-12. 7-in. rng.; T.D. 6,012 ft.
Premier Inv. Co. No. 38 Wyche, SW NE NW sec. 14-19-11. Drlg. 394 ft.
Producers O. & G. Co. No. 1 Hill Est., E½ NE¼ sec. 8-17-11. R.U.
Producers O. & G. No. 1 R. Johnson, NE sec. 5-17-11. R.U.
Tidwell et al No. 1 Natting, sec. 15-22-14. T.D. 2,954 ft.; S.D.
Triangle No. 2 Ross Unit, NW SW NW sec. 23-17-12. Reperf. and tstg.; T.D. 5,180 ft.
Triangle Drlg. Co. No. 2-A State, SW cor. sec. 23-17-12. Drlg. 3,820 ft.
United Gas No. 1 Henderson, NE cor. sec. 36-17-12. Cg. 5,804 ft.
United Gas No. 1-I Skannal, SW SW sec. 25-17-12. T.D. 5,175 ft.; tstg.
United No. 1-A Webb, C sec. 23-17-12. Rng. 7-in.; T.D. 5,172 ft.

Caddo Parish

J. G. Abney No. 1 Thigpen & Herold, NW SW sec. 15-21-15. Drk.
Bayou State No. 1 Stiles, NE NE SW sec. 22-22-15. Comp.; pmp. 15 B.P.D.; T.D. 1,012 ft.
Calatex O. & G. No. 3-A Agurs, SW. cor. sec. 6-16-6. R.U.
W. D. Chew No. 3 Rives, NE sec. 5-20-16. Comp.; pmp. 25 B.P.D.; T.D. 946 ft.
W. D. Chew No. 4 U. S. Govn., NW sec. 5-20-16. T.D. 949 ft.; arg. tst.
C. C. Chew No. 3 Pender, NW NW SW sec. 11-20-15. Cmtd. 6-in. 2,163 ft.; T.D. 2,202 ft. (cor.).
Paul Cooper No. 2 Rodgers, NW SW SW sec. 11-20-15. Drk.
Custer Oil Co. No. 1 Wemple, N½ NW sec. 14-20-15. S.D. 1,650 ft.; rig rep.
D. K. O. Oil Corp. No. 1 Player, SE NW SE sec. 26-21-15. Tstg.; T.D. 1,575 ft.
D. K. O. Oil Corp. No. 1 Tyson, SE NE sec. 17-21-15. 10-in. cmtd. 100 ft.
DeMaggo et al No. 1 Huckaby, SE NE SE sec. 26-22-16. Fsg. for D.S. 1,400 ft.
G.R.C. Oil Co. No. 5 Herndon, NE SE NW sec. 22-21-15. Fsg. for 7-in. at 1,100 ft.; T.D. 1,200 ft.
W. J. Hunter et al No. 1 Stoer, NW SW NE sec. 10-15-15. Drlg. 2,805 ft.
F. L. Luckett No. 1 Connell, SW NE sec. 10-20-15. 6-in. cmtd. 2,174 ft.; T.D. 2,203 ft.; prep. to test.
Tom Pappas No. 2 Spell, SW sec. 28-21-15. Drk.
H. E. Philp No. 1 Fuller, NE cor. sec. 26-22-15. T.D. 1,034 ft.; W.O.
W. L. Porter No. 1 Terbune, sec. 15-21-16. Drk.
Prairie River Synd. No. 1 Hutchinson, SW NW sec. 15-15-12. Drlg. 7,466 ft.
Robson Oil Properties, Inc., No. 1 Cupples, NE sec. 24-16-13 (formerly Falcon Oil Co.). T.D. 5,675 ft.; D.&A.
Rodgers et al No. 1 Thompson, NW SW SW sec. 11-20-15. P.B. to 2,204 ft.; W. O.C.S.
Simplex O. & G. Co. No. 11 Youree, NE SW sec. 7-20-14. Drlg. 154 ft.
P. A. Singlust No. 2 Starr-Brown, SE sec. 28-20-16. Cg. S.W. sd.; T.D. 1,820 ft.; W.O.
Stanolind O. & G. Co. No. 121 Dillon, NE SE sec. 14-21-15. Drk.
Stanolind O. & G. No. 11 J. B. Slattery, NE NW sec. 27-21-15. 6-in. cmtd. 1,395 ft.
J. J. Thompson No. 1 Gamm, NE SW NW

McGREGOR

85,000 Working Barrels in Use

OUR working barrels have been continually improved for 30 years. We have worked with producers in developing many special features for pumping.

We will be glad to try to help you out of your difficulties.

McGREGOR WORKING BARREL COMPANY

Bradford, Pa., U.S.A.

sec. 35-21-15. Tstg. S.W.; S.D.; T.D. 2,225 ft.

Claiborne Parish

Gulf Ref. No. 1 Eva Bennett, SW sec. 31-21-4. Drlg. 3,946 ft.
Gulf Ref. No. 1 H. E. Patton, SE sec. 36-21-5. Drlg. 4,115 ft.
Gulf Ref. No. 2 H. E. Patton, 1,650 ft. N and W, SE cor. sec. 36-21-5. Drlg. 4,020 ft.
Gulf Ref. No. 3 H. E. Patton, SW NE SW sec. 36-21-5. Drlg. 3,050 ft.
Gulf Ref. No. 4 H. E. Patton, NW NE SW sec. 36-21-5. Drlg. 2,300 ft.
T. L. James No. 1 Patton Est., C N½ NE SE sec. 36-21-5. Drlg. 1,775 ft.
T. L. James No. 2 Patton Est., SW NE SW sec. 36-21-5. 9-in. cmtd. 817 ft.
Love Pet. Co. No. 1 H. E. Patton, SE SW SE sec. 36-21-5. Drlg. 4,070 ft.
Love Pet. Co. No. 3 H. E. Patton, NE SW SE sec. 36-21-5. Drlg. 1,720 ft.
Lyons & Neely No. 1 Maggie Patton, C W½ NW SW sec. 31-21-4. Drlg. 2,811 ft.
Magnolia Pet. No. 1 H. E. Patton, NW SE SW sec. 36-21-5. M.I.M.
McMillan et al No. 1-A Maggie Patton, S½ NE SW sec. 31-24-4. Drlg. 3,630 ft.
L. O. McMillan No. 1 H. E. Patton, S½ SW NW sec. 36-21-5. 9-in. cmtd. 900 ft.
L. O. McMillan No. 1 Robert Vaughn, S½ NW NE sec. 36-21-5. R.U.
E. T. Oakes No. 1 M. S. Patton, NE NW NE sec. 1-20-5. Drlg.
Ray P. Oden No. 2 H. W. Patton, NW SE SE sec. 36-21-5. 10-in. cmtd. 681 ft.
Shreveport Oil Corp. No. 1 Edwards, NE sec. 16-20-5w. T.D. 20 ft.; S.D.
Standard Oil of La. No. 1 Baker, 660 S&E NW sec. 27-19n-7w. Cg. 5,984 ft.
J. C. Tippett No. 1 H. E. Patton, 330 ft. N and E, SW SE sec. 36-21-5. R.U.
United Gas et al No. 1 W. Brown, sec. 1-19-6. Bldg. tankage.
United Gas No. 1 W. M. Dobbins, sec. 12-19-6w. O.W.D.D.; cg. 5,319 ft.; S.O.&G.
P. W. Woodruff No. 2 H. E. Patton, C N½ SW NE sec. 31-24-4. Drlg. 2,280 ft.

De Soto Parish

Benedum & Trees No. 1 Clifton, NE NW sec. 33-13-12. Drlg. 4,862 ft.
Rio Rajo Oil Co. No. 7 Prudhomme, SE cor. sec. 20-12-11. T.D. 2,716 ft.; tstg.; 2,000,000 ft. gas; S.D.; W.O.
Stillers et al No. 2 Jenkins, 330 ft. S and W, NE SE NW sec. 35-13-12. S.D. 2,503 ft.; fuel.
R. M. Sundby No. 1 A. P. Garland, NW SW sec. 7-14-14. T.D. 5,548 ft.; W.O.

Grant Parish

Grantland Prod. Co. No. 2 Swope-Labrat, NE SW SE sec. 18-9-1e. Drlg. 1,647 ft.
H. M. S. Corp. No. 1 McNeely, sec. 21-6n-3w. 20-in. csg. 20 ft.
Harvey Weir No. 1 Calfax Bk. & Tr. Co., NE NW sec. 15-7n-3w. Drlg.
Tri State Lse. & Dev. Co. No. 1 Edenborn Est., NE SE SE sec. 13-7-4w. T.D. 3,000 ft.; S.D.

Jackson Parish

G. W. Zeigen No. 5 La. Cen. Lbr. Co., sec. 13-14-2w. Drlg. 3,192 ft.

LaSalle Parish

Air Lift Oil Co. No. 10 Urania, NE NW NE sec. 18-10-2e. Cg. 1,500 ft.
Air Lift Oil Co. No. 11 Urania, NE NW NE sec. 18-10-2e. Drlg. 1,465 ft.
Placid Oil No. 4 Wimberry, C sec. 18-10-2e. Cg. 1,510 ft.
T. & J. Oil Co. No. 1 Urania, NE NW SW sec. 19-10-2e. Drlg.
Old Homestead O. & G. Co. No. 1 Zenoria, SW SE NW sec. 23-9-1e. R.U. and S.D.

Lincoln Parish

Lyons & Neely No. 1 W. H. Patton, N½ NW NW sec. 6-20-4. Drlg.
E. T. Oakes-H. D. Easton and Evans No. 1 R. L. Sanderson, NW SE NW sec. 36-18-1w. Drlg.

Morehouse Parish

So. Carbon Co. No. 3 Miles, NE sec. 36-21-4e. T.D. 2,390 ft.; tstg.

Ouachita Parish

H. L. Woods No. 1 Union, NE sec. 17-19-3e. R.U.
H. L. Woods No. 2 Union Power, SE sec. 17-19-3e. T.D. 2,297 ft.; W.O.
United Gas No. 2 Morris, SE sec. 36-19-3e. Loc.
United Carbon No. 7 Neston, NE cor. sec. 32-19-4e. Cmt. 6-in. 2,187 ft.; W.O.C.S.

Red River Parish

Gulf No. 26 Kennedy, NW sec. 24-13-11. Drlg. 2,526 ft.
Gulf No. 40 E. T. Robinsons, SW sec. 24-13-11. Drlg. 1,390 ft.
Perla Oil Co. No. 1 DeLong, 330 ft. S and E. C sec. 23-12-10. Fsg. 2,800 ft.
J. D. Wadley No. 1 McClelland, SE NE sec. 24-13-11. Drlg. 50 ft.

Sabine Parish

Earl F. Fox No. 1 Blankenship, NE SE NW sec. 13-9-12. T.D. 3,412 ft.; arg. run csg.
Odell Henson No. 11 Long Bell, SE NE NW sec. 5-8-13. Drlg.
Kirk-Green-Way Inc. No. 1 Whitney Corp., NW NE sec. 8-9-13. Drlg. 4,893 ft.
Prod. O. & G. Co. No. 1 Lynch, SW NE SW sec 29-9-13. Pumped off; acid; T.D. 1,608 ft.
W. G. Ray Drlg. Co. No. 3 Looney, NW SE NE sec. 30-9-13. T.D. 2,087 ft.; will acidize.
A. C. Scott No. 1 Bowman-Hicks Lbr. Co., sec. 23-9-13. O.W.D.D.; T.D. 3,070 ft.; arg. test.
Willis & Dowden No. 1 Lynch, SW NE SW sec. 29-9-13. T.D. 1,608 ft.; arg. tst.

Tensas Parish

Ark. La. Gas Co. No. 1 Baker, NE NW NE sec. 7-11-10. Drld. as core test but well blew out with gas at T.D. 465 ft. and bridged; arg. set csg.
H. M. Jones et al No. 1 Chicago Mill & Lbr. Co., NE sec. 30-12n-10e. T.D. 798 ft.; blew out after stng. 8 mo.; gauging 30,000,000 ft. gas and 10,000 bbls. wtr.; drld. out bridge and well blew out again and bridged over; T.D. 798 ft.; W.O.

Union Parish

Interstate Nat. Gas Co. No. 63 fee, SE sec. 3-21-3e. Comp.; 1,500,000 ft. gas; T.D. 2,159 ft.
So. Carbon Co. No. 17 Grayling, SW cor. sec. 21-21-4e. R.U.
So. Carbon No. 18 Grayling, SE cor. sec. 20-21-4e. Loc.

Webster Parish

W. H. Bass Drlg. Co. No. 1 T. Crichton, C NW NW sec. 21-20-9. Drlg. 1,166 ft.
Magnolia No. 2 D. G. Cox, SW SE NE sec. 22-21-10. Drlg. 4,510 ft.
Ohio Oil Co. No. 1 S. P. D. Coyle, NW SE SW sec. 23-21-10. Drlg. 6,920 ft.
Ohio Oil Co. No 2 R. M. Coyle, SE sec. 22-21-10. 9-in. cmtd.; drlg. 4,065 ft.
Ohio No. 1 S. P. D. Coyle and W. Cox, SW SW SE sec. 23-21-10. Drlg.
Ohio Oil No. 1 T. Crichton, Acct. No. 2, SE NE sec. 21-21-10. Drlg.
Ohio Oil No. 1 L. M. Gardner, NE sec. 22-21-10. R.U.
Ohio Oil Co. No. 2 A. H. Gray Acct. No. 2, NW sec. 26-21-10. Drlg. 7,186 ft.
Ohio Oil Co. No. 2 A. J. Hodges, NE NW SW sec. 23-21-10. Drlg. 7,271 ft.
Ohio No. 7-B R. L. Holloway, 586 ft. N, 756 ft. E line, sec. 23-21-10. Drlg.
L. R. Skidmore No. 1 Barnett, NE NW SW sec. 29-17-9. Drlg. 3,530 ft.
Standard Oil Co. of La. No. 1 E. Firdeckeer, 1,320 ft. E, 1,316 ft. S, SW cor. sec. 2-17n-9w. T.D. 7,202 ft.; prep. reperf. csg.
Standard Oil of La. No. 1 E. L. Stewart, SE SE SE sec. 32-21-10. R.U.
United Gas No. 2 Davis, 660 ft. S and E. NW cor. sec. 23-21-10. Arg. reperf.; T. D. 8,551 ft.
United Gas No. 1 Mixon, SE SW sec. 22-21-10. Comp.; flw. 337 bbls. dist. in 19 hrs.; T.D. 8,231 ft.
Woodley Pet. Co. No. 4-B Gray, NE NE sec. 27-21-10. Drlg. 7,165 ft.

SOUTH LOUISIANA FIELDS

Ansela Butte—St. Martin Parish

Y. D. Spell No. 3 Begnaud, sec. 117-9s-5e. T.D. 1,247 ft.; pulling csg.

Bayou Coeotriz—Terrebonne Parish

Shell Pet. Corp. No. 1 Pelican, sec. 35-17s-15e. Drlg. sd. 2,410 ft.

Black Bayou—Cameron Parish

Shell Pet. Corp. No. 37 Watkins, sec. 8-12s-12w. Drlg. sd. 4,047 ft.

Caillou Island—Terrebonne Parish

Texas Co. No. 1 L.L.&E., sec. 18-23s-20e. Drk.
Texas Co. No. 3 State, sec. 19-23s-20e. Drlg. sh. 5,037 ft.
Texas Co. No. 47 State, sec. 18-23s-20e. S.D. 4,529 ft.; salt; 7-in. csg. 4,472 ft.; drlg. plug.

Cankton—St. Landry Parish

Superior Oil Prod. Co. No. 1 Brasseaux, sec. 24-8s-3w. Abd. 8,660 ft.

Charenton—St. Mary Parish

Pan American Prod. Co. No. 3 Laws Realty Co., sec. 25-12s-9e. Drlg. sd. 7,465 ft.
Pan American Ref. Co. No. 4 Laws Realty Co., sec. 30-13s-10e. Drk.
Pan American Prod. Co. No. 1 South Coast Corp., sec. 30-13s-10e. Drlg. sh. 7,162 ft.

Choctaw—Iberville Parish

Standard Oil Co. No. 9 Myrtle Grove, sec. 53-9s-11e. T.D. 3,455 ft.; P.B. 3,160 ft.; to sdtrk.; T.D. 6,060 ft.; P.B. 2,000 ft.; to sdtrk.

Cameron Meadows—Cameron Parish

Burton Sutton Oil Co. No. 18 School Ld., sec. 16-14s-13w. Drk.
Magnolia Pet. Co. No. 19 Cameron Meadows, sec. 16-14s-13w. T.D. 4,714 ft.; recvrd. 2,500 ft. of P.L.O. on D.S.T.; 9⅝-in. csg. 4,694 ft.; P.B. 4,708 ft.; blew out, caught fire; bridged; R.U.; 7-in. csg. 4,696 ft.; fsg.

Dog Lake—Terrebonne Parish

Texas Co. No. 5 State, sec. 5-22s-16e. 10¾-in. csg. 1,505 ft.

Garden Island—Plaquemines Parish

Texas Co. No. 23 State, sec. 37-23s-33e. 18⅝-in. csg. 541 ft.; top salt 5,933 ft.; T.D. 5,965 ft.; P.B. and sdtrkd.; T.D. 5,730 ft.; 7⅝-in. csg. 4,290 ft.; W.O.C.

Gillis—Calcasieu Parish

Fohs Oil Co. No. 1 First Natl. Bank, sec. 13-9s-8w. T.D. 7,158 ft.; P.B. to 6,980 ft.; W.O.C.
Texas Co. No. 12 Nickerson, sec. 1-9s-8w. T.D. 6,718 ft.; 7-in. csg. 6,704 ft.
Union Sulphur Co. No. 12 Barbe, sec. 1-9s-8w. T.D. 9,101 ft.; blew out; caught fire: cratered; cleaning up after blowout; S.D.
Union Sulphur Co. No. 14 Barbe, sec. 1-9s-8w. Drlg. sd. 6,728 ft.
Union Sulphur Co. No. 7 Castle, sec. 14-9s-8w. Drlg. sd. and sh. 5,764 ft.
Union Sulphur Co. No. 12 Powell Lbr. Co., sec. 12-9s-8w. 10¾-in. csg. 1,601 ft.; drlg. sh. and L. 6,307 ft.

Hackberry—Cameron Parish

Burton-Sutton Oil Co. No. 1-A Duhon, sec. 22-12s-10w. Drk.
W. T. Burton No. 1 Kennedy, sec. 22-12s-10w. Drlg. sh. 1,580 ft.
W. T. Burton No. 1 J. J. Roboria, sec. 11-9s-2w. R.U.
Gulf Oil Corp. No. 23 Erwin, sec. 12-12s-10w. Drlg. sd. and sh. 5,505 ft.
Independent Oil Co. No. 1 Sanner, sec. 29-12s-10w. T.D. 1,775 ft.; 5-in. csg. 1,775 ft.; swbd. S.W.; S.D.
Stanolind O. & G. Co. No. 1 J. H. Duhon, sec. 27-12s-10w. Old T.D. 4,627 ft.; drlg. sdtrkd. hole sh. and L. 4,373 ft.
Stanolind O. & G. Co. No. 25-B Gulf Land fee, sec. 15-12s-10w. 20-in. csg. 158 ft.; drlg. sd. and L. 4,792 ft.
Stanolind O. & G. Co. No. 1 Little, sec. 28-12s-10w. Run 109 ft. 16-in. csg.; drlg. sh. 1,942 ft.
Stanolind O. & G. Co. No. 18 School Land, sec. 16-12s-10w. T.D. 5,996 ft.; P.B. and sdtrkd.; drlg. sh. 5,904 ft.
Sutton Joint Interest No. 1 Ellender, sec. 22-12s-10w. 7-in. csg. 4,853 ft.; I.P. 7½ B.P.H.; ¼-in. ck.
Texas Co. No. 21 State, sec. 12-12s-9w. 10¾-in. csg. 2,126 ft.; drlg. sdy. L. 6,508 ft.

Iowa—Jefferson Davis Parish

Shell Pet. Corp. No. 23 Heyd, sec. 13-9s-7w. T.D. 4,428 ft.; 5-in. csg. 4,390 ft.

Jeanerette—St. Mary Parish

Herton Oil Co. No. 1 Banta, sec. 40-13s-9e. Drlg. sh. 1,535 ft.
Herton Oil Co. No. 6 Carter, sec. 38-13s-9e. R.U.
Teche Oil Co. No. 1 LeBourgeois, sec. 59-13s-8e. 10-in. csg. 1,400 ft.; T.D. 6,676 ft.; making D.S.T.

Jennings—Acadia Parish

W. T. Burton No. 1 Robira, sec. 41-9s-2w. Drlg. sh. and L. 2,871 ft.
Alfred Glassell No. 1 R. McFarlain, sec. 41-9s-2w. Moving in.
A. C. Glassell et al No. 1 J. Trusel, sec. 42-9s-2w. T.D. 7,015 ft.; I.P. 20 B.P.H.; 12/64-in. ck.
Lake City Oil Co. No. 2 Jennings Synd., sec. 46-9s-2w. T.D. 3,990 ft.; drlg. in sdtrkd. hole 3,940 ft.
T. C. Markly No. 1 Gourney, sec. 42-9s-2w. Old T.D. 4,280 ft.; skidded drk.; S.D.; salt 5,049 ft.
S. Rhoden et al No. 1 Iowa-Jennings, sec. 45-9s-2w. Drlg. sh. 6,799 ft.
Stanolind O. & G. Co. No. 18 Houssiere-Latrielle, sec. 47-9s-2w. 8⅝-in. csg. 5,358 ft.; drlg. sh. 6,797 ft.
Superior Oil Prod. Co. No. 2 Eunice-Crowley, sec. 12-9s-2w. Drlg. sdy. L. 3,977 ft.
Superior Oil Prod. Co. No. 2 Jennings-Heywood, sec. 41-9s-2w. 11¾-in. csg. 1,465 ft.; drlg. sh. 5,604 ft.
Superior Oil Prod. Co. No. 3 Jennings, sec. 42-9s-2w. Drlg. sdy. sh. 3,718 ft.
Superior Oil Prod. Co. No. 2 Lecklet, sec. 42-9s-2w. 7-in. csg. 7,041 ft.; top salt 7,600 ft.; P.B. 6,877 ft.; perf. csg. 5,780-90 ft.; flwg.; no gauge.
Superior Oil Prod. Co. No. 3 Wm. Lecklet. Drlg. sdy. sh. 3,730 ft.
Superior Oil Prod. Co. No. 4 Lecklet, sec. 42-9s-2w. Drk.

Lafitte—Jefferson Parish

Texas Co. No. 6 Lafitte, sec. 20-17s-24e. T.D. 1,771 ft.; lost returns; moved drlg. barge 135 ft. N of first hole; T.D. 10,043 ft.; oil sd.; run logging device.
Texas Co. No. 2 Milling, sec. 20-17s-24e. Dredging canal.
Texas Co. No. 7 Rigolet, sec. 29-17s-24e. Drlg. sh. 2,687 ft.
Texas Co. No. 1 State-Bayou Norman, sec. 28-17s-24e. Drlg. sh. and L. 5,672 ft.

Lake Barre—Terrebonne Parish

Texas Co. No. 37 Lake Barre-State. T.D. 10,959 ft.; D.S. stuck; shot at 8,113 ft.; cutting and pulling.

Lake Pelto—Terrebonne Parish

Texas Co. No. 15 State, sec. 17-23s-18e. Cg. sdy. sh. 5,924 ft.

Lake Hermitage—Plaquemines Parish

Gulf Oil Corp. No. 6 Lafourche, sec. 11-8s-25e. T.D. 6,390 ft.; tstd. S.W.; drlg. deeper; no report.

Leesville—Lafourche Parish

Gulf Oil Corp. No. 1-A City of New Orleans, sec. 35-21s-22e. T.D. 5,831 ft.; sdtrkd. 4,831 ft.; drlg. sd. 5,975 ft.
Texas Co. No. 59 L.L.&E., sec. 27-21s-27e. T.D. 5,176 ft.; P.B. and sdtrkd.; drld. to T.D. of 4,820 ft.
Texas Co. No. 62 Leesville, sec. 29-17s-24e. T.D. 4,015 ft.; 7⅝-in. csg. 4,008 ft.

Lockport—Cameron Parish

Magnolia Pet. Co. No. 6 Freeberg, sec. 9-10s-9w. Drlg. sh. 3,764 ft.

New Iberia—Iberia Parish

Wm. Hellis No. 8 Bernard, sec. 54-12s-7e. Drlg. sh. 565 ft.
Wm. Hellis No. 4 Bullock & Burke, sec. 25-12s-7e. T.D. 4,505 ft.; P.B. and sdtrk.; T.D. 4,401 ft.; P.B. and sdtrkd.; T.D. 4,548 ft.; 7-in. csg. 3,722 ft.; swbg.
Wm. Hellis No. 3 Schwing, sec. 57-12s-7e. Drlg. sd. and sh. 4,499 ft.
Texas Co. No. 2 Duhe, sec. 26-12s-7e. Drlg. sh. 4,248 ft.
Texas Co. No. 3 Bryant, sec. 25-12s-7e. R.U.
Texas Co. No. 5-B Hanzen, sec. 54-12s-7e. Drlg. sh. 4,591 ft.

Port Barre—St. Landry Parish

Pan American Prod. Co. No. 2 Watkins, sec. 4-6s-5e. Bldg. drk.

Roanoke—Jefferson Davis Parish

Humble O. & R. Co. No. 8-B Devilbiss, sec. 11-9s-4w. Drlg. sh. 4,815 ft.

Sorrento—Ascension Parish

Sorrento Oil Co. No. 1 Bernard, sec. 9-19s-14e. S.D. 6,262 ft.
Tri-State Dev. Co. No. 1 Duplessis, sec. 69-10s-2e. Drk.

South Jennings—Jeff Davis Parish

Stanolind-Amerada Pet. Corp. No. 2 Calcasieu Natl. Bank, sec. 10-10s-3w. M.I.R.

Starks—Calcasieu Parish

J. R. Turnbull No. 1 Industrial Lbr. Co. sec. 20-9s-12w. S.D. 6,433 ft.

St. Martinsville—St. Martin Parish

Tide Water Oil Co. No. 1-B Smedes, sec. 57-11s-6e. Drk.
Tide Water Oil Co. No. 3 Smedes, sec. 57-11s-6e. Drlg. 120 ft.

Sulphur—Calcasieu Parish

Union Sulphur Co. No. 840 fee, sec. 29-9s-10w. T.D. 3,740 ft.; P.B. 3,316 ft.; R.U. to pmp.
Union Sulphur Co. No. 842 fee, sec. 29-9s-10w. T.D. 5,475 ft.; P.B. and sdtrkd.; S.D. 5,286 ft.
Union Sulphur Co. No. 844 fee, sec. 29-9s-10w. Drlg. sh. and L. 4,285 ft.

Tepetate—Acadia Parish

Continental Oil Co. No. 2-D Homeseekers Dev. Co., sec. 29-7s-2w. Drlg. sh. and shells 6,262 ft.
Continental Oil Co. No. 7-A L. L. Welch, sec. 28-7s-2w. Cg. sd. 8,309 ft.

Valentine—Lafourche Parish

Pan American Prod. Co. No. 3 Harang, sec. 8-17s-20e. T.D. 7,718 ft.; D.P. stuck.
Pan American Prod. Co. No. 4 Harang, sec. 8-17s-20e. Cg. wtr. sd. 6,745 ft.
Pan American Prod. Co. No. 5 Harang, sec. 8-17s-20e. 16-in. csg. 235 ft.; W.O.C.

White Castle—Calcasieu Parish

Shell Pet. Corp. No. 4 Shingle, sec. 12-11s-12e. T.D. 8,903 ft.; P.B. 8,717 ft.; milling out of csg.

S. LOUISIANA WILDCATS

Acadia Parish

H. E. Dalton No. 1 Setting, sec. 17-7s-1w. T.D. 5,426 ft.; left 900 ft. of D.S. in hole.
Humble O. & R. Co. No. 1 Nordyke, sec. 23. 9⅝-in. csg. 6,843 ft.; cg. sh. 10,026 ft.

Allen Parish

Humble O. & R. Co. No. 3 Bel, located in cratered hole, sec. 26-6s-7w. 10¾-in. csg. 165 ft.; T.D. 2,870 ft.; 7-in. csg. 2,766 ft.; shot well; failed to stop flwg. S.W.; S.D.

Avoyelles Parish

Coastal Minerals No. 1 Purdy-Hess, sec. 25-2n-3e. Drk.; S.D.; high wtr.
George Conover No. 1 Purdy-Hess, sec. 36-2n-3e. Drk.
Frost Oil Co. No. 1 Hines Lumber Co., sec. 3-3n-4e. Drk.

Calcasieu Parish

D. D. Oil Co. No. 1 Lutcher Moore, sec. 11-8s-13w. T.D. 8,447 ft.; D.S. stuck.
Woodley Pet. Co. et al No. 1 Gray, sec. 32-10s-12w. R.U.

Cameron Parish

Magnolia Pet. Co. No. 1-A Dobbortine, sec. 9-15s-14w. 8⅝-in. csg. 617 ft.; drlg. sh. and L. 5,202 ft.
Southern Sulphur Co. No. 2 State, sec. 29-15s-10w. S.D. 2,611 ft.
Union Sulphur Co. No. 1 J. O. Hebert, sec. 18-12s-8w. Drlg. sdy. sh. 7,409 ft.

Cameron Parish—Gulf of Mexico

Superior Oil Prod. Co. et al No. 1 State-Gulf of Mexico, 3,800 ft. W, 6,200 ft. S of SE cor. of irregular sec. 4-15s-8w. Loc.

East Baton Rouge Parish

Cavalier Oil Co. No. 1 Vingnes, sec. 40-8s-2e. T.D. 6,690 ft.; D.S. stuck.

Evangeline Parish

Belle Chenney Springs Oil Co. No. 1 Belle Springs Land Dev. Co., sec. 10-2s-1w. T.D. 2,214 ft.; re-R.U.
Continental Oil Co. No. 1 Pardee Lbr. Co., sec. 18-4s-1w. Drlg. sdy. sh. 7,493 ft.

Iberia Parish

Jefferson Lake Oil Co. No. 414 State Lake Pigneur, Twp. 12s-5e. Top salt 990 ft.; set 10¾-in. csg. 5,095 ft.; top oil sd. 6,915 ft.; 7-in. csg. 6,930 ft.; perf. csg. 6,930-40 ft.; jetted with gas; flwd. est. 50 bbls. of net oil and S.W.; prep. to D.D.

Jefferson Parish

Louisiana Crusader Oil Corp. No. 1 Langley, sec. 36-7s-5w. Drlg. sh. 3,780 ft.
Triangle Oil Co. No. 1 Conroe, sec. 125-12s-11e. T.D. 2,461 ft.; drill stem stuck.

Jefferson Davis Parish

Shell Pet. Corp. No. 1 Joe Sturdivant, sec. 25-10s-4w. 10¾-in. csg. 2,616 ft.; 7-in. csg. 4,630 ft.; perf. csg. 8,540-50 ft.; flwd. 2½ bbls. of dist. per hr.; 16/64-in. ck.; T.P. 3,000 lbs.; C.P. 2,750 lbs.; P.B. 8,480 ft.; tstd. S.W. 8,505-8,485 ft.; cmtd. off perf.; W.O.C.
Stanolind O. & G. Co. No. 2-B Calcasieu Natl. Bank, sec. 28-7s-3w. M.I.R.
Stanolind O. & G. Co. No. 1 United Life Accident Co., sec. 16-11s-5w. 13⅜-in. csg. 2,142 ft.; drlg. sh. 9,219 ft.

Lafourche Parish

Fohs Oil Co. No. 1 State Lake, sec. 65-17s-19e. Drlg. sd. 6,423 ft.
Wm. Hellis No. 1 City of New Orleans, sec. 19-23s-23e. Drlg. sdy. sh. oil show 7,336 ft.

Livingston Parish

Coastline Oil Co. No. 1 Addison Trust Co., sec. 7-7s-3e. Drk.

Plaquemines Parish

Gulf Oil Corp. No. 1 Bay-Adams, sec. 25-52s-19. Drlg. sd. and L. 4,220 ft.

Tide Water Oil Co. No. 3 Manhattan Fruit Co., sec. 26-21s-30e. Loc.

Rapides Parish

C. L. Decker No. 1 Lee Lbr. Co., sec. 21-5n-3e. Drk.

R. D. Webb No. 1 A. M. Brasher, sec. 22-4n-2w. Drlg. sdy. sh. 4,778 ft.

St. Bernard Parish

Gulf Oil Corp. No. 1 Lake Lery, sec. 28-14s-14e. Drlg. sdy. sh. 5,880 ft.

Southern Sulphur Co. No. 2 State Lake Borgne, sec. 38-14s-15e. 13⅜-in. csg. 303 ft.; sdy. sh. 3,670 ft.; no report.

St. Charles Parish

Amerada Pet. Corp. and La. Ld. & Expl. Co. No. 1 State, sec. 13-15s-20e. R.U.

St. Landry Parish

Shell Pet. Corp. No. 1 Boagni, sec. 48-8s-4e. 10¾-in. csg. 2,521 ft.; T.D. 7,318 ft.; fsg.

St. Martin Parish

Geo. E. Lilly et al No. 1 Martin, sec. 32-9s-7e. R.U.

Texas Co. No. 9 St. Martin, sec. 21-8s-7e. 18⅝-in. csg. 106 ft.; top salt 8,848 ft.; T.D. 8,858 ft.; W.O.C.

Texas Co. No. 3 State, sec. 14-10s-9e. 18-in. csg. 101 ft.; drlg. S.W. sd. 7,-417 ft.

St. Mary Parish

Texas Co. No. 1 Horse Shoe Bayou, sec. 40-17s-9e. T.D. 10,975 ft.; 7⅝-in. csg. cmtd. on bottom; drlg. sh. and L. 11,-427 ft.

Texas Co. No. 1 State-Bateman Lake, sec. 21-16s-12e. T.D. 8,364 ft.; S.D.

Terrebonne Parish

Humble O. & R. Co. No. 1 H. J. Ellender, sec. 23-19s-19e. 9⅝-in. csg. 8,735 ft.; drlg. sh. 11,707 ft.

ARKANSAS

Clark County

W. M. Martin No. 1 Coke, NW sec. 14-10-20. Cg. 800 ft.

Grant County

Wallace & Staples No. 1 W. F. Davis, SE SE NW sec. 23-6-15. T.D. 2,382 ft.; junked and abd.

Hempstead County

Birdwell et al No. 1 Duckett, SW NW SW sec. 24-13-24. S.D. 600 ft.

Shepherd & Todd et al No. 1 Smith, NW SW SE sec. 11-11-25. T.D. 600 ft.; S.D. fuel.

Lafayette County

Carl B. King Drlg. Co. No. 1 Eben H. Woolcott, NE cor. sec. 36-19-26. Drlg. 5,700 ft.

Little River County

Joe Strahan No. 1 Dierks, SW SE sec. 21-12-28. Fsg. 2,330 ft.

Miller County

Odell Hinson No. 1 Montana Realty Co., NE NW NW sec. 3-17-28. T.D. 5,235 ft.; hole clean; W.O.

E. H. Moore No. 2 Dale, 660 ft. N and W. C sec. 24-15-26. 12-in. cmtd. 500 ft.; W.O.C.S.

E. H. Moore No. 3 Dale, 660 ft. W of No. 7, sec. 24-15-26. R.U.

Nivla Oil Corp. No. 1 M.&P. Bank, NE SE SE sec. 18-15-26. Drlg. 3,223 ft.

Miller County—Rodessa

McClanahan et al No. 1 W. L. Capps, sec. 11-20-28. R.U.

Nevada County

Benedum & Trees No. 9 Grove, NE NE SW sec. 10-14-20. R.U.; W.O.

Benedum & Trees No. 2 Mary Jackson, SE NE NE sec. 9-14-20. M.I.R.

Benedum & Trees No. 1 A. R. Mitchell, SE SW SE sec. 4-14-20. R.U.

Berry Asphalt No. 1 W. Haynie, NE NE SW sec. 6-14-20. Comp.; pmp. 20 B.P. D.; T.D. 1,193 ft.

Berry Asphalt Co. No. 2 J. Haynie, NE SE SW sec. 6-14-20. T.D. 1,239 ft.; cg. oil sd.

Berry Asphalt Co. No. 3 W. Haynie, SE NE SW sec. 6-14-20. Cg. 2,226 ft.

Hall & Briscoe No. 2 Ritchie, NE NW SE sec. 10-14-20. T.D. 2,275 ft.; arg. P.B.

Wm. S. King No. 1, sec. 6-13-22. T.D. 2,-610 ft.; Travis Peak; W.O.

A. M. Lacy No. 1 H. C. Bennett, SW SE sec. 24-14s-22w. Drk.

Walter Lowd No. 1 T. S. Grayson, SW SW SE sec. 12-14-20. T.D. 2,385 ft.; S.D.; W.O.

W. E. Stewart No. 1 Mendenhall, cen. SE NW NE sec. 1-14-20. S.D. 2,313 ft.

G. H. Vaughn No. 1 Christopher, SW SW SE sec. 3-14-20. S.D. 4,335 ft.

Union County

Bruce Hunt No. 1 Robbins, 330 ft. N and E, SW SW SE sec. 12-19s-16. Drk.

Dietrich et al No. 1 Aaronson, NE SW NE sec. 3-18-16. T.D. 2,200 ft.; S.W.; S.D.; W.O.

Marine Oil Co. No. 1 Marcus Justiss, NW¼ sec. 18-18-17. Drk.

Marine Oil Co. No. 6-E W. B. Thompson, SW NE NE sec. 10-18-13. Drlg. 2,586 ft.

Penn-Ark. Corp No. 1 W. N. Raulston, 330 ft. S and E, NW NW SE sec. 12-17-14. T.D. 2,983 ft.; W.O.S.R.

S. H. A. Oil Corp. No. 1 H. D. Warren, NE SW SW sec. 10-17-14. Drlg. out cmt. 3,342 ft. and W.O.S.R.; T.D. 3,342 ft.

Sklar No. 1-A Cordell, NE SE SW sec. 24-17-16. 7-in. cmtd. 2,148 ft.; T.D. 2,153 ft.; W.O.C.S.

TEXAS

Week Ending April 17

GULF COAST FIELDS

Raccoon Bend—Austin County

Humble O. & R. Co. No. 11-X Austin College, Wm. Henry Sur. T.D. 1,150 ft.; W.O.C.

Humble O. & R. Co. No. 12 A. L. McCasland, W. C. White Sur. T.D. 4,120 ft.; I.P. 280 B.P.D.; ¼-in. ck.

Humble O. & R. Co. No. 20-X, R. J. Paine, W. C. White Sur. Drk.

Humble O. & R. Co. No. 19 Thompson, W. C. White Sur. T.D. 4,110 ft.; 5½-in. csg. 4,070 ft.; I.P. 228 B.P.D.; ¼-in. ck.

Hastings—Brazoria County

W. L. Goldston et al No. 1 Thomas Ross, S. McKissick Sur., Blk. F. Drlg. sh. 5,937 ft.

Humble O. & R. Co. No. 1 J. T. Baker, Lot 13, B.B.B.&C. Sur. T.D. 6,060 ft.; 5½-in. csg. 5,995 ft.; I.P. 25 B.P.H.; ¼-in. ck.

Humble O. & R. Co. No. 3-B Brown, Perry & Austin Sur. Drlg. sh. 3,150 ft.

Humble O. & R. Co. No. 1 C. W. French, Lot 8, B.B.B.&C. Sur. Drlg. sh. 5,700 ft.

Humble O. & R. Co. No. 1 Southwestern University, Wm. Henery Sur. Drlg. sh. 4,630 ft.

Navarro Oil Co. No. 2 Callahan, Lot 5, H.T.&B. Sur. No. 29. Cg. 5,930 ft.

Stanolind O. & G. Co. No. 3-A Avitts, H.T.&B. Sur. No. 29. 16-in. csg. 90 ft.; drlg. sh. 3,400 ft.

Stanolind O. & G. Co. No. 2 Frank M. Berger, H.T.&B. Sur. No. 37. 10¾-in. csg. 1,657 ft.; cg. sd. 5,810 ft.

Stanolind O. & G. Co. No. 3 C. H. Blount, B. T. Masterson Sur. Drlg. sh. 5,501 ft.

Stanolind O. & G. Co. No. 9 Drake, H.T.& B. Sur. No. 36. 16-in. csg. 90 ft.; drlg. sh. and L. 5,150 ft.

Stanolind O. & G. Co. No. 1 A. C. McKibben, H.T.&B. Sur. No. 29. T.D. 6,-080 ft.; 7-in. csg. 5,867 ft.; I.P. 597 B. P.D.; ¼-in. ck.

Stanolind O. & G. Co. No. 2 McKibben, Lot 16, H.T.&B. Sur. No. 29. R.U.

Stanolind O. & G. Co. No. 1 Massey Condon, Lot 20, H.T.&B. Sur. No. 29. Drlg. sh. 1,332 ft.

Stanolind O. & G. Co. No. 2 Condon, Lot 11, H.T.&B. Sur. Drlg. sh. 2,780 ft.

Stanolind O. & G. Co. No. 3 Law, H.T.&B. Sur. No. 36. 16-in. csg. 90 ft.; drlg. sh. and L. 3,765 ft.

Stanolind O. & G. Co. No. 2 Steve Paul, A. C.H.&B. Sur. No. 2. T.D. 6,100 ft.; 7-in. csg. 5,666 ft.

Stanolind O. & G. Co. No. 3 Steve Paul, A. C.H.&B. Sur. Drlg. sh. and L. 5,250 ft.

Lockridge—Brazoria County

Gulf Oil Corp. No. 1 Fred Reiss, J. W. Hall Sur. T.D. 8,164 ft.; rng. 7,000 ft. of 9⅝-in. csg.; P.B. to 2,400 ft.; sdtrkd.; 9⅝-in. csg. 5,000 ft.; cg. 8,235 ft.

Gulf Oil Corp. No. 2 Gibson, J. W. Hall Sur. R.U.

Gulf Oil Corp. No. 1-A G. L. Wood et al, Thomas Alsberry Sur. No. 4. Abst. No. 2. 13⅜-in. csg. 1,431 ft.; drlg. sh. 5,-994 ft.

Gulf Oil Corp. No. 3 Wilkes Smith, J. W. Hall Sur. R.U.

Shell Pet. Corp. No. 3 Ramsey State Farm, J. W. Hall Sur. No. 11. 10¾-in. csg. 1,390 ft.; W.O.C.

Manvel—Brazoria County

Burton Drilling Co. No. 1 J. Kroll, center Lot 101, A.C.H.&B. Sur. No. 92. R.U.

L. C. McBride-San Jacinto Oil Co. No. 1 F. E. Whites, E. Little Sur. T.D. 4,082 ft.; I.P. 180 B.P.D.; ¼-in. ck.

R. Olsen No. 2 Nichols, H. N. Little Sur. Drlg. sh. 3,237 ft.

E. A. Stone No. 1 Nichols, E. Little Sur. Drk.

Texas Co. No. 24 Houston Oil Field Assn., Lot 16, A.C.H.&B. Sur. T.D. 5,710 ft.; 7-in. csg. 5,685 ft.

Texas Co. No. 4 Lemmer, S. Spraggins Sur. Drk.

Old Ocean—Brazoria County

Harrison and Abercrombie No. 4 Bernard River Ld. and Development Co., Charles Breen Sur. 13⅜-in. csg. 1,405 ft.; drlg. sh. 3,367 ft.

Sandy Point—Brazoria County

Bunte O. & G. Co. No. 1 A. A. Sharp, Chester S. Gorbot Sur. Drk.

Bunte O. & G. Co.-Florence Investment Co. No. 1 Fite. Drlg. 70 ft.

Heyser—Calhoun—Victoria County

George Echols No. 4 Bennett, J. Galban Sur. R.U.

Humble O. & R. Co.-Plymouth Oil Co. No. 13-B P. H. Welder, A. Sisneros Sur. Drk.

Humble O. & R. Co.-Plymouth Oil Co. No. 14-B P. H. Welder, A. Sisneros Sur. T.D. 5,491 ft.; W.O.C.

Humble O. & R. Co. No. 10-A P. H. Welder, J. M. Rios Sur. Drlg. sh. 4,617 ft.

Portilla Oil Co. No. 15-C P. H. Welder, A. Sisneros Sur. Drlg. sh. 3,936 ft.

Anahuac—Chambers County

Gulf Oil Corp. No. 2 Pommer, sec. 40, H. &T.C. Sur. R.U.

Gulf Oil Corp. No. 7 Knowles, W. T. Knowles Sur. T.D. 7,115 ft.; I.P. 708 B.P.D.; ¾-in. ck.

Gulf Oil Corp. No. 5 Wilcox, sec. 48, H. &T.C. Sur. R.U.

Gulf Oil Corp. No. 6 Wilcox, sec. 48, H. &T.C. Sur. Drlg. sh. 4,610 ft.

Humble O. & R. Co. No. 1 E. T. Drought, H.&T.C. Sur., sec. 46. T.D. 7,137 ft.; P.B. 7,103 ft.; 5½-in. csg. 7,108 ft.; perf. csg. 7,100-02 ft.; I.P. 262 B.P.D.; ¼-in. ck.

Humble O. & R. Co. No. 10, Gripon, sec. 51, H.&T.C. Sur. T.D. 7,069 ft.; I.P. 18 B.P.H.; ¼-in. ck.

Humble O. & R. Co. No. 12 Gripon, H.& T.C. Sur. No. 51. Drk.

Humble O. & R. Co. No. 7 G. C. Johnson, sec. 47, H.&T.C. Sur. Drlg. sh. 5,735 ft

Humble O. & R. Co. No. 8 C. Johnson, sec. 48, H.&T.C. Sur. Drk.

Humble O. & R. Co. No. 10 Max Engles, sec. 50, H.&T.C. Sur. 9⅝-in. csg. 1,225 ft.; T.D. 7,108 ft.; rmg.

Humble O. & R. Co. No. 26 Middleton, H. &T.C. Sur., sec. 62. T.D. 7,135 ft.; I.P. 262 B.P.D.; ¼-in. ck.

Humble O. & R. Co. No. 14 Tyrell, sec. 52, H.&T.C. Sur. Drlg. sh. 1,045 ft.

Humble O. & R. Co. No. 13-B White, J. McGahey Sur. Drk.

Humble O. & R. Co. No. 16 White, J. McGahey Sur. Drlg. sh. 1,820 ft.

Barbers Hill—Chambers County

Superior O. & G. Co. No. 3 G. W. Baker, H Griffith Sur. Sh. 1,210 ft.; no report.

A. Weber et al No. 1 Zappe, Wm. Bloodgood Sur. Sh. 2,137 ft.; no report.

Cotton Lake—Chambers County

Salt Dome Oil Co. No. 1-D Lawrence, 932 ft. W of No. 1-C, S. Barrow Sur. T.D. 6,519 ft.; oil sd.; making D.S.T.

Seabreeze—Chambers County

Sun Oil Co. No. 1-A Broussard-Hebert, T. &N.O. Sur. No. 127. 13⅜-in. csg. 1,-366 ft.

Sun Oil Co. No. 1-B White, Wm. Mavs Sur. 18⅝-in. csg. 1,226 ft.; T.D. 9,637 ft.; rmg.

Turtle Bay—Chambers County

Stanolind O. & G. Co. No. 1 Silva-Shadrack, Burney Sur. 10¾-in. csg. 1,158 ft.; W.O.C.

Big Creek—Fort Bend County

Gulf Oil Corp. No. 75 T. W. Davis, M. Young Sur. T.D. 2,942 ft.; pulling screen.

Blue Ridge—Fort Bend County

Telshaw-Reese and Echelson No. 1 Blakely, E. Drew Sur. R.U.

Texas Gulf Prod. Co. No. 16 Blakely, Lot 9, Blk. C. Drlg. sh. 3,904 ft.

Boling—Fort Bend County

John Deering No. 1 J. M. Moore, Charles Bettner Sur. Drlg. sh. 4,435 ft.

Mack Hank Oil Co. No. 3-A J. R. Farmer, J. Scott Sur. R.U.

Mack Hank Oil Co. No. 3-B J. R. Farmer, J. Scott Sur. T.D. 4,877 ft.; 7-in. csg. 4,855 ft.

Mack Hank Oil Co. No. 5-C E. C. Farmer, J. Scott Sur. Drk.

Orchard—Fort Bend County

Gulf Oil Corp. No. 52 Moore, James Frazier Sur. Drlg. gbo. 856 ft.

Gulf Oil Corp. No. 49 J. M. Moore, Germain Immg. No. 8, 13⅜-in. csg 2,522 ft.; drlg. sd. and sh. 7,231 ft.

High Island—Galveston County

Stanolind O. & G. Co. No. 1-B Cade, H Denman Sur. T.D. 6,190 ft.; set retainer at 5,202 ft.

Stanolind O. & G. Co. No. 61 Cade, N. Fitzsimmons Sur. Drlg. salt 4,838 ft.

Stanolind O. & G. Co. No. 15-A Smith, M. Dunman Sur. R.U.

Dickinson—Galveston County

Atlantic Ref. Co. No. 1 R. C. Roberts, P. G. Merritt Sur. Drlg. sh. and L. 420 ft.

Coast Pet. Corp. No. 6 Maco Stewart, W. K. Wilson Sur. Cg. sd. and sh. 8,390 ft.

Diadem Oil Corp. of Texas No. 2 W. J. Way, E. P. Epperson Sur. T.D. 8,198 ft.; 6⅝-in. csg. 8,191 ft.; perf. csg. 8,058-62 ft.; tstd. S.W.; pulling screen.

Diadem Oil Corp. of Texas No. 1 Pauline Frederick. Loc.

Humble O. & R. Co. No. 1 Kilgore, W. K. Wilson Sur. Drk.

Humble O. & R. Co. No. 15-A Maco Stewart, W. K. Wilson Sur. Drk.

Humble O. & R. Co. No. 17-A Stewart, J. Sellers Sur. Drlg. sh. and sd. 7,730 ft.

Humble O. & R. Co. No. 18-A Stewart, W. K. Wilson Sur. Drlg. sh. 6,880 ft.

W. E. McKinney et al No. 3-A Galveston-Houston Elec. R.R., W. K. Wilson Sur. Drlg. L. 7,000 ft.

Pure Oil Co. No. 1-B Sealy Hutchins, P. G. Merritt Sur. Drlg. sd. and sh. 1,589 ft.

Sinclair Prairie Oil Co. No. 1 W. Weems W. K. Wilson Sur. Loc.

Stanolind O. & G. Co. No. 1 Dameani, W. K. Wilson Sur. T.D. 8,780 ft.; 7-in. csg. 8,712 ft.

Stanolind O. & G. Co. No. 2 Dameani, W. K. Wilson Sur. R.U.

Stanolind O. & G. Co. No. 7 State. 13⅜-in. csg. 2,013 ft.; drlg. sh. 6,258 ft.

Turman Oil Co. and Maco Stewart No. 1 Stewart, W. K. Wilson Sur. Drk.

Greens Lake—Galveston County

Sun Oil Co. No. 8 Hughes, W. C. M. Baker Sur. T.D. 3,910 ft.; 7-in. csg. 3,890 ft.; swbg.

Batson—Hardin County

Bunte O. & G. Co. No. 1 Melhome, J. Melhome Sur. R.U.

Silsbee—Hardin County

Republic Prod. Co.-Houston Oil Co. No. 9 Brooks, G. W. Brooks Sur. Drlg. sh. and L. 3,250 ft.

Republic Prod. Co.-Houston Oil Co. No. 10 Brooks, G. W. Brooks Sur. T.D. 6,958 ft.; 7-in. csg. 6,953 ft.; flwd. 134 bbls. in 14 hrs.; ¼-in. ck.

Republic Prod. Co.-Houston Oil Co. No. 11 Brooks, G. W. Brooks Sur. 10¾-in. csg. 1,441 ft.; T.D. 6,964 ft.; P.B. 6,953 ft.; tstd. 12 stands of oily S.W. on D.S.T., 6,935-53 ft.

Republic Prod. Co.-Houston Oil Co. No. 12 Brooks fee, G. W. Brooks Sur. R.U.

Sour Lake—Hardin County

Texas Co. No. 322 fee, S. Jackson Sur. Drlg. rock 2,051 ft.

Clinton—Harris County

Stanolind O. & G. Co. No. 1 D. A. Oates, C. Martinez Sur., Abst. 543; 9⅝-in. csg. 6,771 ft.; drlg. sdy. sh. 8,067 ft.; top gas sd. 8,063 ft.; T.D. 8,783 ft.; conditioning mud; well trying to blowout.

Fairbanks—Harris County

Amerada Pet. Corp.-Stanolind O. & G. Co. No. 1 W. Jacobs, Blk. 1, sec. 2, W.C.R. R. Sur. Drk.

Humble—Harris County

Texas Co. No. 273 Landslide, Robt. Dunman Sur. Drk.

Mykawa—Harris County

West Prod. Co. No. 10 W. H. Irwin, W. B. Walker Sur. Drk.

Pierce Junction—Harris County

Gulf Oil Corp. No. 42 Taylor, J. Hamilton Sur. Drk.

South Houston—Harris County

Stanolind O. & G. Co. No. 2 Dist. No. 8. S.D. 4,600 ft.

Stanolind O. & G. Co. No. 2, Dist. 9. 9⅝-in. csg. 1,407 ft.

Stanolind O. & G. Co. No. 2, District 21. 13⅜-in. csg. 89 ft.

Stanolind O. & G. No. No. 2 District 22. Drk.

Stanolind O. & G. Co. No. 2 Dist. 51. R.U.

Stanolind O. & G. Co. No. 5 Holland and Price, H.T.&B. Sur. No. 6. 13⅜-in. csg. 90 ft.; T.D. 4,030 ft.; P.B.; sdtrkd.; T.D. 4,000 ft.; 5½-in. csg. 3,917 ft.; W.O.C.

Stanolind O. & G. Co. No. 2 C. P. Williams, H.T.&B. Sur. No. 6, Tr. 45. Drlg. 1,873 ft.

Stanolind O. & G. Co. No. 1 Worley H.T. &B. Sur. No. 6. Drlg. sh. and sd. 3,-563 ft.

Tomball—Harris County

Humble O. & R. Co. No. 2 Hagler, Chas. Maroutt Sur. Drlg. sh. 5,529 ft.

Humble O. & R. Co. No. 1 L. T. Norvell, P. Pruitt Sur. T.D. 5,564 ft.; I.P. 556 B.P.D.

Humble O. & R. Co. No. 3 Martens, G. Lamb Sur. T.D. 963 ft.; W.O.C.

Humble O. & R. Co. No. 1-B Murphy, J. Pruitt Sur. T.D. 982 ft.

Humble O. & R. Co. No. 1 Tomball Townsite Unit No. 8, Wm. Hurd Sur. T.D. 5,574 ft.; 5½-in. csg. 5,569 ft.; I.P. 556 B.P.D.; ¼-in. ck.

Humble O. & R. Co. No. 1 Tomball Townsite, Unit 12, Wm. Hurd Sur. Drlg. sh. 3,459 ft.

Kourey Drlg. Co. No. 2 Hillegeist, J. House Sur. Drlg. sh. 4,000 ft.

Mauritz—Jackson County

Shell Pet. Corp. No. 1-B Mauritz. T.D. 5,703 ft.; 5-in. csg. 5,693 ft.; P.B. 5,651 ft. perf. csg. 5,645-47 ft.; flwd. 441 bbls. of oil and 159 bbls. of S.W. through ¼-in. ck.

Amelia—Jefferson County

Humble O. & R. Co. No. 1 A. Busceine, C. Blk. 3, C. Williams Sur. Drlg. sh. 5,-996 ft.

Humble O. & R. Co. No. 1-B Ephlin, Lot 18, Blk. D., C. Williams Sur. Drk.

Humble O. & R. Co. No. 1-G Ephlin, Blk. E, Lot 4, Mayfair Subd., C. Williams Sur. Drlg. sdy. sh. 6,260 ft.

Humble O. & R. Co. No. 1 Gist, C. Williams Sur. T.D. 6,780 ft.; I.P. 26 B.P.H.; ¼-in. ck.

Humble O. & R. Co. No. 2 Industrial Invest Co., C. Williams Sur. T.D. 6,780 ft.; run csg.

Humble O. & R. Co. No. 1-B M. I. Lefler, Unit 19, Blk. E, C. Williams Sur. T.D. 6,783 ft.; 5½-in. csg. 6,778 ft.; swbd. S.W.; P.B.

Humble O. & R. Co. No. 2 M. L. Lefler, C. Williams Sur. T.D. 6,780 ft.; 5½-in. csg. 6,776 ft.; I.P. 25 B.P.H.; ¼-in. ck.

Humble O. & R. Co. No. 2-B M. I. Lefler, Lot D, C. Williams Sur. T.D. 1,520 ft.; run csg.

Humble O. & R. Co. No. 1 A. L. Nolan, Blk. E. C. Williams Sur. T.D. 1,542 ft.; rng. csg.

Humble O. & R. Co. No. 3 J. H. Phelan, C. Williams Sur. Drlg. sh. 2,339 ft.

Humble O. & R. Co. No. 3 Pinchback, C. Williams Sur. Drlg. sh. 2,975 ft.

Humble O. & R. Co. No. 1 G. Sims, C. Williams Sur. T.D. 6,780 ft.; 5½-in. csg. 6,776 ft.
Humble O. & R. Co. No. 4 Tyrell, A. Savery Sur. T.D. 6,780 ft.; 5½-in. csg. 6,780 ft.; P.B. 6,751 ft.; I.P. 415 B.P.D.; ¼-in. ck.
Humble O. & R. Co. No. 1 W. M. Wohlfert, C. Williams Sur. Drk.
Glenn H. McCarthy No. 4 Long, H. Williams Sur. T.D. 5,380 ft.; oil sd.; 7⅝-in. csg. 5,359 ft.
Normandie Oil Co. No. 1 R. J. Peveto, C. Williams Sur. Spudded.
Feyton Bros. No. 1 Pansy Yount, A. Houston Sur. Spudded.
Stanolind O. & G. Co. No. 1 J. W. Hall, H. Williams Sur. Drlg. sh. 5,540 ft.
Stanolind O. & G. Co. No. 2 Sargl, H. Williams Sur. 16-in. csg. 60 ft.; drlg. sh. 2,165 ft.
Stanolind O. & G. Co. No. 3 Sargl, H. Williams Sur. R.U.

Big Hill—Jefferson County

Stanolind O. & G. Co. No. 2 M. E. Fitzhugh, Wm. McFaddin Sur. R.U.

Fannett—Jefferson County

Gulf Oil Corp. No. 1 Junker, W. A. Smith Sur. 9⅝-in. csg. 6,009 ft.; T.D. 6,553 ft.; run logging device.

LaBelle—Jefferson County

Sun Oil Co. No. 1 John Ward, 933 ft. S of No. 2 Broussard, Wm. Burton Sur. 18⅝-in. csg. 109 ft.; drlg. sh. and L. 7,580 ft.

Nome—Jefferson County

Shell Pet. Corp. No. 5 Carpenter, M. Peveto Sur. T.D. 6,145 ft.; tstd. S.W. on D.S.T.; 5-in. csg. 6,075 ft.; P.B. 6,047 ft.; perf. csg.
Shell Pet. Corp. No. 5 Paggi, Kirby Sur. T.D. 6,050 ft.; 5-in. csg. 6,011 ft.; I.P. 380 B.P.D.; ¼-in. ck.
Shell Pet. Corp. No. 1 Texas Public Service Co., W. H. Aldridge Sur. Drlg. sh. 4,190 ft.
Sun Oil Co. No. 1 J. E. Burrows, J. Blair Sur. T.D. 6,045 ft.; 5¾-in. csg. 5,995 ft.
Sun Oil Co. No. 6 Paggi, J. W. Kirby and W. H. Aldridge Sur. Cg. 5,960 ft.
Sun Oil Co. No. 1 A. J. Mouboules, J. Blair Sur. 10¾-in. csg. 1,062 ft.; T.D. 8,768 ft.; P.B. 8,175 ft.; tstd. S.W.; P.B. 5,650 ft.

Cleveland—Liberty County

Gulf Oil Corp. No. 17-C Kirby, J. Pleasants Sur. Drlg. sh. 2,892 ft.

Hankamer—Liberty County

Gulf Oil Corp. No. 2-A Weiser, George Stengler Sur. T.D. 5,225 ft.; P.B. 3,710 ft.

Hull—Liberty County

Bishop Oil Co. No. 1 C. R. Wilson, J. DeVore Sur. Oil sd. 780-88 ft.; S.D. 1,180 ft.
D.&L. Production Co. No. 4 Mecon and Layton, J. DeVore Sur. T.D. 5,680 ft.; cutting and pulling drill stem.
Eclipse Oil Co. No. 1 Barrow. T.D. 5,014 ft.; S.D.
Gulf Oil Corp. No. 23 Baldwin, J. Devore League Sur. Oil sd. 4,975-5,014 ft.; T.D. 5,016 ft.
Hamil and Smith No. 1 Barngrover, J. DeVore Sur. Drlg. sh. 565 ft.
Republic Prod. Co. No. 162 Dolbear, J. DeVore Sur. Drlg. rock 2,720 ft.
Texas Co. No. 6 Hannah, J. Devore Sur. Drlg. sh. 3,895 ft.

Palacios—Matagorda County

Glenn H. McCarthy No. 1 Foley Land Co., L. Goodwin Sur. M.I.R.

Hawkinsville—Matagarda County

Sun Oil Co. No. 2 Craig, T. Williams Sur. Top salt 796 ft.; base salt 2,099 ft.; 18⅝-in. csg. 2,174 ft.; 13⅜-in. csg. 3,700 ft.; drlg. sh. 5,460 ft.

Markham—Matagarda County

G. G. Hamil, Tr., No. 2 T. E. Hudson, H. Parker Sur. Abd. 4,159 ft.

Van Vleck—Matagarda County

Royal Oil Co. No. 1 Fine Holub, M. Cummings Sur. Drlg. sh. 7,311 ft.
Skelly Oil Co. No. 2 Rugely, I.&G.N. Sur. No. 8. 10¾-in. csg. 1,399 ft.; tstg. perf. csg. 8,060-72 ft.; tstd. S.W.; made squeeze job; W.O.C.
Skelly Oil Co. No. 2 Grace Moore, I.&G.N. Sur. Drlg. sh. 3,630 ft.

Conroe—Montgomery County

Butler & Hornes No. 1 Koonee, Collins Sur. T.D. 5,158 ft.; 7-in. csg. 5,990 ft.; I.P. 326 B.P.D.; ¼-in. ck.

Ace—Polk County

Peyton Bros. No. 1 A. H. Waldenan, P. A. Sublett Sur. R.U.

Livingston—Polk County

Ownby Drlg. Co. No. 2 W. B. Munson, A. Viesca Sur. Drlg. sdy. sh. 2,783 ft.

Segno—Polk County

J. K. Dorrance No. 3 Wing, I.&G.N. Sur. No. 15. 10¾-in. csg. 610 ft.; T.D. 5,187 ft.; run 7-in. csg.
J. K. Dorrance No. 4 Wing, I.&G.N. Sur. No. 15. Loc.
Gulf Oil Corp. No. 1 Wing, I.&G.N. Sur. No. 15. T.D. 5,183 ft.; run 7-in. csg.
Humble O. & R. Co. No. 1 Kirby Lbr. Co., P. Garcia Sur. Top Cockfield 5,122 ft.; 7-in. csg. 5,187 ft.; drlg. sh. 5,324 ft.
LaQuinta Oil Co. No. 1 Wing Est., I.&G.N. Sur. No. 15. R.U.

Quintana-O'Connor-Greta—Refugio County

Cosmo Pet. Co. No. 16 Heard, Blk. 119, Refugio Townsite. Drlg. 3,912 ft.
Hewitt & Daugherty No. 44 Lambert, Swisher Sur. No. 6. Drlg. 2,612 ft.
Hewitt & Daugherty No. 47 Lambert, Swisher Sur. Drlg. sh. 5,612 ft.
Illinois Pet. Co. No. 3 Heard, Ximines Sur. Drlg. sh. 6,112 ft.
Josey & Bruton No. 1-B Lambert, Hews Sur. Abd. 5,895 ft.
Quintana Pet. Co. No. 46-A Tomoconnor, J. M. Swisher Sur. No. 4. T.D. 6,005 ft.; I.P. 690 B.P.D.
Quintana Pet. Co. No. 13-C Tomoconnor Swisher Sur. T.D. 5,960 ft.; I.P. 712 B. P.D.
United Gas Corp. No. 48 Lambert, J. M. Swisher Sur. Drlg. sh. 5,600 ft.
United Gas Corp. No. 50 Lambert, J. M. Swisher Sur. T.D. 5,895 ft.; I.P. 437 B. P.D.; ¼-in. ck.
United Gas Corp. No. 12 J. J. O'Brien. T.D. 8,204 ft.; fsg.

Keeran—Victoria County

Gulf Oil Corp. No. 10 Keeran Estate, M. DeLeon Sur. T.D. 6,045 ft.; perf. csg. 5,912-14 ft.; flwg. 27 bbls. of fluid; ¼ in. ck.; 65% S.W.
Union Oil Co. of Calif. No. 4 Keeran, M. DeLeon Sur. Drlg. sh. 625 ft.

Placedo—Victoria County

Barnsdall-American Liberty Oil Co. No. 10 J. M. Pickering, Wm. Rupley Sur. Drlg. sh. 5,151 ft.
Barnsdall-American Liberty Oil Co. No. 14 Pickering, S.A.&M.G. Sur. T.D. 4,777 ft.; 93 B.P.D.; ⅞-in. ck.
Barnsdall-American Liberty Oil Co. No. 15 Pickering and Roos, S.A.&M.G. Sur. No. 6. Drk.
Costa Oil Co. et al No. 2 J. E. Schovajsa, Wm. Rupley Sur. Drlg. cap rock 4,703 ft.
Haynes B. Owenby No. 3 Traylor, S.A.&M. G. Sur. Drk.
Magnolia Pet. Co. No. 7 Sklar, Lot 18, S. A.&M.G. Sur. No. 7. Drlg. sh. 932 ft.
Shell Pet. Corp. No. 3 Houston National Bank, Lot 6, S.A.&M.G. Sur. Drlg. sh. and L. 3,823 ft.
Superior O. & G. Co. et al No. 5 J. J. Hosek, S.A.&M.G. Sur. Drlg. sh. 833 ft.
Superior Oil Co. and Gillespie No. 5 J. J. Hosek, S.A.&M.G. Sur. No. 7. R.U.
Superior Oil Co.-Gillespie No. 7 J. J. Hosek, S.A.&M.G. Sur. No. 7. Drlg. sh. 837 ft.
Westgate Oil Co. No. 6 F. F. Mieska, S.A. &M.G. Sur. No. 10. Drk.

Clay Creek—Washington County

Sun Oil Co. No. 6 Droger, J. Perry Sur. R.U.
Virginia Oil Co. No. 1 Joe Kenieczny, S. M. Williams Sur. 10¾-in. csg. 104 ft.; T.D. 1,500 ft.; washing to bottom.

Five Corners—Wharton County

Texas Co. No. 7-B Pierce Est., J. Caldwell Sur. Drk.
Texas Co. No. 6-B Pierce, J. Hyland Sur. T.D. 5,554 ft.; 7-in. csg. 5,544 ft.; swbg.

Louise—Wharton County

C. E. Oil Co. No. 1 R. C. Fair, Morris and Cummins Sur. No. 290. Drk.
Fure Oil Co. No. 6 McIntyre, Morris and Cummins Sur. No. 288. R.U.

Pickett Ridge—Wharton County

Texas Co. No. 33-A Pierce Est., G.B.&N. Sur. No. 4; 9,000-ft. test. Bldg. drk.

Spanish Camp—Wharton County

Albert Plummer et al No. 1 J. R. Clored, S. F. Austin Sur. Drlg. sh. 482 ft.

Withers—Wharton County

Texas Co. No. 25-C Pierce Est., Wm. Pettus Sur. T.D. 5,558 ft.; run 7-in. csg.
Texas Co. No. 26-C Pierce, Wm. Pettus Sur. 10¾-in. csg. 1,233 ft.; drlg. sh. 5,553 ft.
Texas Co. No. 27-C Pierce Est., Wm. Pettus Sur. R.U.

GULF COAST WILDCATS

Austin County

R. L. Hopkins No. 1 J. W. Recnecke, J. Stephenson Sur. R.U.

Brazoria County

Pure Oil Co. No. 1 P. M. Slade, S. F. Austin Lge. Drlg. sdy. sh. 6,808 ft.
Texas Co. No. 2 Robbins, James W. Brougham Sur. Drlg. sdy. sh. 5,498 ft.

Calhoun County

Matagorda Oil Co. No. 1 Brundet, Tr. 8, Matagorda Island. 13⅜-in. csg. at 1,826 ft.

Fort Bend County

Research, Inc., No. 1 J. M. Moore, S. Kennedy Sur. 10¾-in. csg. 448 ft.; S.D. 2,400 ft.

Galveston County

Shell Pet. Corp. No. 2 Maco Stewart, 4,400 ft. E of No. 1 J. Spillman Sur. 10¾-in. csg. 1,484 ft.; T.D. 6,800 ft.; fsg.

Harris County

H. J. DeArman et al No. 1 Tyrell-Garth, L. Hemminway Sur. R.U.
H. M. Harrell et al No. 1 F. N. Bullock, Charles Bowman Sur. T.D. 6,581 ft.; core bbl. stuck.
Texas Gulf Prod. Co. No. 1 Gillespie and Garnsey, Simon Contreras Sur. 10¾-in. csg. 1,438 ft.; T.D. 8,084 ft.; perf. csg. 7,097-7,100 ft.; swbd. dry; set retainer at 7,084 ft.; perf. csg. 7,078½-82 ft. and 7,040-43 ft.; tstg.

Houston County

American Liberty Oil Co. No. 1 J. D. Bean, D.W.R.R. Co. Sur. 10¾-in. csg. 1,796 ft.; T.D. 6,260 ft.; 7-in. csg. 6,120 ft.; P.B. 6,040 ft.; perf. csg. 6,026-40 ft.; tstg.
H. L. Hunt No. 1 J. E. Elliott, J. M. Procella Sur. 13⅜-in. csg. 495 ft.; cg. sandstone 6,335 ft.

Jackson County

Texas Co. No. 1 T. A. Mauritz, Morris and Cummings Sur. Rec. 130 ft. of mudcut oil, 350 lbs. pressure; T.D. 5,111 ft.; 7-in. csg. 5,080 ft.; flwd. 72 B.P.D.; ¼-in. ck.; T.P. 1,675 lbs.; C.P. 1,550 lbs.

Jefferson County

Humble O. & R. Co. No. 1 Jefferson Ld. Co., C. Hillibrant Sur. T.D. 8,232 ft.; 7-in. csg. 8,162 ft.; T.D. 8,458 ft.; cutting and pulling stuck D.S.; P.B. 7,860 ft.; drld. out 7,880 ft.; perf. csg. 7,827-34 ft.; flwd. wash wtr.; no oil; shut in.
Magnolia Pet. Co. No. 1 J. H. Phelan, T.&N.O. Sur. No. 14. 13⅜-in. csg. 3,016 ft.; drlg. sh. 4,884 ft.
David B. MacDaniel et al No. 1 Nona Mills, J. C. Grant Sur. Abd. 7,886 ft.

Lavaca County

Welshire Union Oil Co. No. 1-A Pohl, F. Bass Sur. T.D. 3,250 ft.; P.B. 2,950 ft.; two tests failed; S.D.

Liberty County

Jack Frazier et al No. 1 B. F. Haoachy, Hugh B. Johnosn Sur. Drlg. wtr. well.

Matagorda County

Continental Oil Co. No. 2 Hawkins Est., D. McCarthy Sur. Bldg. drk.
Continental Oil Co. No. 2 Robbins, J. C. Franz Sur. 11¾-in. csg. 6,430 ft.; T.D. 8,912 ft.; 8⅝-in. csg. 8,912 ft.; drlg. sdy. sh. 8,948 ft.
Glenn McCarthy No. 1 Foley, sec. 19, Susan Perkins Sur. 10¾-in. csg. 2,008 ft.; T.D. 8,585 ft.; oil sd.; rng. 7-in. csg. perf. csg. 8,573-83 ft.; gas and S.W.; set retainer at 7,906 ft.; perf. csg. 7,873-85 ft.; comp.; I.P. 175 bbls. fluid P.D.; ½-in. ck.; 28°, 53-grav. dist. and brackish wtr.; T.P. 2,750 lbs.; C.P. 3,000 lbs.
United North & South Development Co. No. 1, J. S. Cotton Sur. Drlg. sdy. sh. 9,300 ft.

Polk County

C. E. Gates No. 1 L. O. Jackson, J. W. Abbey Sur. 10¾-in. csg. 487 ft.
Mayo et al No. 1 Catline Mayo, J. G. Loving Sur. 10¾-in. csg. 250 ft.; drlg. sh. 3,033 ft.

Trinity County

West Prod. Co. No. 1 Texas Long Leaf Lbr. Co., John Williams Sur. Drk.

Tyler County

Republic Prod. Co.-Houston Oil Co. No. 2 Hurd, N. Hurd Sur. 10¾-in. csg. 2,296 ft.; drlg. sh. 6,715 ft.

Victoria County

Commonwealth O. & G. Co. No. 3 W. H. Bennett, J. Estuvan-Galbon Sur. 7-in. csg. cmtd. on bottom; perf. 5,467-70 ft.; flwg. 3 bbls. fluid per hr.; ⅛-in. ck.; T.D. 5,475 ft.; started making dist.; well killed and perfs. cmtd. off.
Magnolia Pet. Co. No. 1 Annie B. Wayne, T.&N.O. Sur. No. A-407. Perf. csg. 2,519½-24 ft.; tstd. wet gas through 9/64-in. ck.

Walker County

Garland, Hartman & Page No. 1 Carey Ld. & Dev. Co., D. M. McDonald Sur. R.U.

Waller County

Nine Blumenthal No. 1 Alex P. Kelley, S. H. Haddin Sur. Drlg. sh. 4,430 ft.
Red Bank Oil Co. No. 1 Roy Chapman, M. Donohoe Sur. Drlg. sh. 945 ft.
Stanolind O. & G. Co. No. 1 Wm. Hargrove, T. S. Reese Sur., sec. 110. R.U.

Washington County

K. D. Harriss and Starr No. 1 Ellerman, A. D. Houston Sur. Drk.

Wharton County

S. G. Harrison and H. E. Williams No. 1 H.&G.H. Harfst, Lyman Conisrite Sur. Drk.
J. F. Hutchins No. 1 J. J. Winsley, James Tumlinson Sur. 10¾-in. csg. 647 ft.; drlg. sdy. sh. 5,036 ft.
Smith and McDannald No. 1 Hurlbut, I. &G.N. Sur. No. 23. Moving in.
Texas Co. No. 1 Kluck, Jos. Hyland Sur. T.D. 4,718 ft.; run 5-in. csg.; perf. csg. 4,642-57 ft.; flwg. dry gas.

S. W. TEXAS WILDCATS

Aransas County

Barnsdall Oil Co. No. 1-A Kate Edwards, 330 ft. S line, Lot 85, 660 ft. SW No. 1 Wm. Lewis Sur. Set 10¾-in. csg. 1,408 ft.; drlg. 7,440 ft.
J. L. Collins No. 1 Wheeler, Cen. Tuton Sur., Tr. 2-D. Cg. S.W. su. 5,389 ft.

Atascosa County

Frontier Oil Co. No. 1 Oppenheimer, John Sharp Sur. Set csg. 2,770 ft.; P.B. 2,667 ft.; S.D.
R. J. Roberts et al No. 1 Elder, Sur. 190. T.D. 3,160 ft.; fsg. drill pipe.

Bastrop County

Wheelock & Collins No. 1 Turner, A. Sitton Sur. T.D. 1,756 ft.; D.&A.

Bee County

L. Glasscock No. 1 Ablinger, J. Ryan Sur. Set sur. csg. 1,350 ft.; sd. 4,828-50 ft.; Cg. 5,697 ft.

Blanco County

E. L. Nixon No. 1 Hornberger, 1,200 ft. S line, 300 ft. E line, Sur. 723. Drlg. 913 ft.

Brooks County

Standard of Tex. No. 1 Mestina, Mestina Lse. No. 3. Drlg. 2,020 ft.

Burleson County

M. R. Exploration Co. No. 3 Fountain, Wm. Raleigh Sur. M.I.M.
Red Bank Oil Co. No. 2 Grann, 6,063 ft. N line, 1,900 ft. W line, E. Santef Sur. M.I. rig.

Caldwell County

Housel Oil Co. No. 1 Woolridge, near Joliet. No report.
Sherman Nelson No. 1 Etheridge. T. Hunter Sur. Set csg. 1,970 ft.

Cameron County

Saxet Prod. Co. No. 1 Port Isabel Irr. Co., 600 ft. N line Loma Alta Lake, Sh. 29, Espiritu Santo Gr. M.I.M.
Stapper Petroleum Corp. No. 1 Port Isabel Irrigation Co., Blk. 17, P.I.I.Co. Subd. Santo Gr. S.D. for repairs 6,170 ft.

Dimmitt County

Wilcox O. & G. Co. No. 1 Light ranch, 330 ft. N and E line, sec. 67. Drlg. 4,053 ft.

Duval County

Argo Oil Co. No. 1-A D.C.R.C.. Sur. 498. Fsg. 2,426 ft.
Atlantic Ref. Co. No. 1 Lowe ranch, 330 ft. E line, 1,678 ft. NE cor. Sur. 466. D.&A. 4,516 ft.
Diamond Halff Oil Co. No. 1 Sinclair, sec. 405. D.&A. 3,010 ft.
Frank Gravis No. 1 Vaello Puig, 330 ft. W line, 2,718 ft. S line, 1,760.73-ac. tr., Sur. 250. Sd. 4,762-68 ft.; D.S.T. 15-min., rec. 700 ft. oil; set csg. 4,765 ft.; comp.
H. F. Grimm No. 1 Mew, Sur. 289. Sd. 4,386-93 ft.; tstd. S.W.; cg. 4,427 ft.
Henshaw Bros. No. 1 McGuffin, W½, sec. 230. Drlg. 2,130 ft.
Texas Co. No. 3-B D.C.R.C. Sur. 583. Drk.
E. R. Thomas Estate No. 3 Parr, SW¼, Sur. 26. Sd. 4,660-70 ft.; D.S.T., rec. 120 ft. P.L.O. at 720 lbs. W.P. in 15 min.; set csg. 4,672 ft.; cleaning in pits.

Edwards County

Auld, Dodson & Lyman No. 1 Rigsby, sec. 16. Drlg. 1,020 ft.

Frio County

Amerada Pet. Corp. No. 1 Harriman, Flores Sur. 306. Drlg. 6,110 ft.

Goliad County

Goliad Oil Corp. No. 1 Cole, 206 ft. W line, CN&SL, Lot 33, Goliad Town Trs. Drk.

Guadalupe County

J. R. Brinkley No. 1 Trammel, Hunter Sur. T.D. 2,314 ft.; comp.; 120 B.P.D.
J. R. Brinkley No. 2 Trammel, Hunter Sur. Set csg. 1,990 ft.; W.O.C.
Byrd Oil Co. No. 1 Schueneman, G. Dewitt League. Cg. chalk.
Louis Crouch No. 1 King, J. D. Clements Sur. R.U.
Lincoln Pet. Co. No. 1 Baenzinger, Mansola Sur. Set csg. 1,990 ft.; drlg. plugs.
Robertson et al No. 1 Blumberg, M. Baker Sur. Drlg. 1,026 ft.

Hidalgo County

Daskam et al No. 2 Daskam, C Lot 14-A, Porc. 45. M.I.M.
Young & Bonneau No. 1 Diaz, Tr. 331, Porc. 40. Rmg. 2,540 ft.

Jim Hogg County

Cole Pet. Co. No. 1 Yeager, Sur. 452. Drlg. 2,215 ft.
Gifford Oil Co. and Purnell No. 2 Armstrong, S½, Sur. 43. Drlg. 3,253 ft.
S. Payne No. 1 Holbien, 150 ft. N and W lines, Blk. 10, Sh. 3, Animas Gr. R.U.

Jim Wells County

H. J. O. & G. Co. No. 1 Allen, Blk. 2, Wade ranch. Loc.
Magnolia Pet. Co. No. 7 Seeligson, 10,433-ac. tr., Los Jaboncillos Gr. Loc.
Roberts et al No. 1 Wade, Lot 2, Wade ranch. Loc.
Tesmalis & Reese No. 1 Martha Earhart, 330 ft. S and W lines, 80-ac. tr., Suggs Sur. Cg. 2,316 ft.

Karnes County

De Graff & Reele No. 1 Cochran, 460 ft. E line, 160 ft. S line, McConnell Lge. S.D. 950 ft. (cor.).

LEGAL

Department of the Interior, U. S. Land Office, Las Cruces, New Mexico. Notice is hereby given that the W½ and W½ SE¼ Sec. 15, T. 17 S., R. 32 E., N.M.P.M., 400 acres, Baish oil and gas field, New Mexico, is offered to the responsible qualified bidder of the highest bonus per acre for lease under Section 17 of the act of February 25, 1920 (41 Stat. 437) as amended by the act of August 21, 1935 (49 Stat. 674), at the royalty rate scale in the lease form shown in Circular 1386, at a sale to be held in the United States Land Office, Las Cruces, New Mexico, at ten oclock, A.M., May 18, 1937. The minimum bid which will be accepted is $1.50 per acre. The land will be offered as a single unit. The successful bidder must deposit on the date of sale a certified check on a solvent bank, or cash, for one-fifth of the amount and file the showing of qualifications to receive a lease required by Section 7 of Circular 1386. The remainder of the bonus bid and the annual rental at the rate of $1.00 per acre must be paid prior to the issuance of the lease. The bidders are warned against violation of the provisions of Section 59 of the United States Criminal Code, approved March 4, 1909, prohibiting unlawful combination or intimidation of bidders. The right is reserved to reject any and all bids at the discretion of the Secretary of the Interior. Register.

Victoria Drlg. Co. No. 1 John Yanta, J. Hardaway Sur. T.D. 1,511 ft.; S.D.
Victoria Drlg. Co. No. 1 Wm. Yanta, J. Hardaway Sur. M.I.M.

Kerr County

S. W. Forrester No. 1 Bailey, Brendle Sur. No. 408. Set csg. 1,080 ft.; W.O.C.

Live Oak County

R. H. Feltner No. 2 Sanger, 330 ft. W line, 990 ft. N line, Sur. 385. R.U.
E. M. Jones No. 3 Ezell, SE¼, sec. 3, Ezell ranch. R.U.
Loma Oil Co. No. 1 Anderson, 159-ac. tr., J. Turner Sur. Drlg. 516 ft.
R. B. Sanger No. 1 Adams, 330 ft. N and E lines, 80-ac. tr., Sur. 122. R.U.

McMullen County

Big Rock Oil Corp. No. 1 Martin, Ulelting Sur. No. 6. S.D. 532 ft.
H. K. Boysen No. 1 Murphy, Murphy Sur. 480. Drlg. 395 ft.
Howell Oil Corp. No. 1 Martin, Sur. 213. Set csg. 60 ft.; W.O.C.
Humble O. & R. Co. No. 1 Gouger, 330 ft. S and E lines, SE¼, sec. 46. Drlg. sh. 3,142 ft.
Reynolds & Richardson No. 1 Shiner ranch, sec. 39, C. C. Shumway Subd. T.D. 2,208 ft.; D.&A.
Rowan & Hope No. 1 Rhodes, NE¼ sec. 18, Seale & Morris Sur. M.I.M.

Medina County

A. Chmel No. 1 Odem, 160 ft. W line, 493 ft. N line tr., Castro Sur. 174. M.I.M.
National Oil Co. of Texas No. 1 Gerdes, Haby Sur. No. 32. Drk.

Nueces County

Clarkwood Oil Co. No. 1 H. B. Baldwin, Blk. 11, Russell Farm Lots. Drlg. 3,030 ft.
L. Glasscock No. 1 Kansas Life. Ins. Co., 330 ft. N and W line, sec. 196. Spd.
Green River Oil Co. No. 1 Cassens, sec 26, Longorio Sur. Spudded.
Southern Minerals Corp. No. 1 R. King, sec. 32, King Farm Lots. Cg. 5,823 ft.
Taylor Pet. Co. No. 1 Stiles, Blk. 14, sec. 18, Petronilla ranch. Spudded.
Wellington Oil Co. and Seaboard Oil Corp. No. 1 Dugger, sec. 125, Park Subd. Drlg. 3,220 ft.

Real County

Sun Oil Co. No. 1 Dietert, 1,980 ft. E line, 660 ft. S line, sec. 7, G.W.T.&B. Sur. Set csg. 5,680 ft.; S.G.; cleaning.

San Patricio County

Eleanor Oil Co. No. 1 Davis, 208.8-ac. tr., G. Grover Sur. M.I.M.
Eleanor Oil Co. No. 1 Green Est., 1,674-ac. tr., T. T. Williamson Sur. Sds. 6,573-77 ft., 6,580-90 ft. and 6,592-96 ft.; odor oil; T.D. 7,300 ft.; D.&A.
Conroe Drlg. Co. No. 1 McKamey, Blk. M, Paul Subd. R.U.
Phillips Pet. Co. No. 1 Schmidt, sec. 81, Paul Subd. Attempted D.S.T. 5,330-53 ft.; failed to hold; rec. 100 ft. mud and oil odor; sd. 5,316-39 ft.; rec. 100 ft. oil on D.S.T.; set csg. 5,560 ft.; drlg. plugs.
Wheelock & Collins No. 1 Willis, Lot 3, Gregory Farm Sur. Drlg. 3,317 ft.
Windsor Oil Co. No. 1 Bissett, Tr. 3, Trivoli Subd., Crockett Sur. Loc.

Starr County

Cook, Morris & Arnold No. 2 S.U.C.C., Blk. 23, Porc. 89. T.D. 600 ft.; S.D.
C. T. Daye No. 1 Seabury, Sh. 5, Porc. 75. Drlg. 326 ft.
Donroy Oil Co. No. 1 Ramon, 2,400 ft. SE line, 150 ft. SW line, sec. 150. Cg. 1,281 ft.
G. Harroun No. 1 Guerra, Blk. 6, Porcs. 55 and 56. T.D. 3,003 ft.; D.&A.
Henry Mode et al No. 1 Kelsey-Bass, Blk. 7, Porcs. 86 and 87. R.U.
Transwestern Oil Co. No. 2 Slick, 330 ft. N and E lines, sec. 527 ft. Drlg. 4,112 ft.

Webb County

C. H. Brady No. 1 Garcia, Sur. 786. Loc.
E. Garner No. 1 Saldivar, Blk. 12, Sur. 657, J. V. Borrego Gr. Sd. 1,001-06 ft.; S.O. D.S.T. 1,003-06 ft.; rec. 2 joints of mud and oil.
O. W. Killam No. 1 Garcia, Sur. 786. Loc.
O. W. Killam No. 1 Laurel Bros., Sur. 333. Sd. 2,031-35 ft.; R.U. to pmp; set csg. 2,026 ft.
Lu-Tex Oil Co. No. 1-A Lone Star Constr. Co., Blk. 26, Porcs. 12, 13 and 14. Drlg. 2,316 ft.
J. W. Magee No. 1 Garcia, Blk. 21, James Subd. R.U.
Mills Bennett Prod. Co. No. 2 Slator, Blk. 89, Mission Subd., Borrego Gr. Sd. 1,462-66 ft.; tstd. oily mud; drlg. 2,020 ft.
Ohio Fuel Oil Co. No. 2 D.C.R.C., Blk. 20, Sur. 100. Drlg. 1,261 ft.
F. M. Shaver No. 1 Trafton, Sur. 281. R.U.
Vernor & Carson No. 1 Webster. Drlg. 2,620 ft.

Willacy County

Ruez-Morton, Inc., No. 1 F. Armendiaz, C Lot 9, Sh. 4, San Juan de Carricitos Gr. Drlg. 537 ft.
Ruez-Morton, Inc., No. 1 Johnson-Stillman, Lot 14, Blk. 25, Sh. 44, San Juan de Carricitos Gr. S.D. 643 ft.
Shell Pet. Corp. No. 1 Yturria, Sh. 64, San Juan de Carricitos Grant (workover). T.D. 7,662 ft.; to drill deeper; R.U.

Zapata County

H. Guinn Lewis No. 1 S. Benavides, Blk. 39, Villa Gr. Cg. 1,610 ft.
Lundell Prod. Corp. No. 1 Ramirez, Sh. 1, Porc. 18. Drlg. 256 ft.

Zavalla County

Wilcox O. & G. Co. No. 1 Gillman, sec. 11. Drlg. 3,126 ft.

S. W. TEXAS PROVEN

McCampbell—Aransas-San Patricio Counties

Atlantic Ref. Co. No. 2 Maryland Trust Co., 330 ft. N and E lines, Blk. 23. Set csg. 6,516 ft.; W.O.C.
Atlantic Ref. Co. No. 5-B McCampbell, Lot 5, Blk. 49. Drlg. 2,060 ft.
Atlantic Ref. Co. No. 6-B McCampbell, Blk. 49. Drlg. 6,210 ft.
Buckingham Oil Co. No. 2-B McCampbell, Lot 13, Blk. 40. Sd. 7,320-7,400 ft.; S.O. &G.; set csg. 7,440 ft.; perf. csg. 7,350-60 ft.; made S.W.; S.D.
Buckingham Oil Co. No. 4-A McCampbell, Blk. 41, Orick Sur. Sd. 6,540-48 ft.; set csg. and perf. 6,540-44 ft. and 6,546-48 ft.; sanded up; cleaning in pits.
Buckingham Oil Co. No. 6-A McCampbell, Blk. 41. Drlg. 7,340 ft.
Collins & Broughton No. 1 McCampbell, Lot 5, Blk. 37, McCampbell Subd. Sd. 6,546-58 ft.; set csg. 6,560 ft.; swbd. S.W.; S.D.; W.O.O.
Landreth Prod. Co. No. 1 McCampbell, Lot 4, Blk. 40. Drlg. 5,860 ft.
J. Nelson No. 1 Riggs, 330 ft. NW line, 213 ft. SW line, 6.46-ac. tr., Trs. 12 and 13, Blk. 16. Loc.
Rutherford Oil Co. No. 1 Scrivner, 330 ft. NE and NW line, Lot 16. Drlg. 5,910 ft.

Foley—Bee County

W. D. Walton No. 1 Holzmark, James A. York Sur. Cg. 4,261 ft.

Plummer—Bee County

Ann Oil Co. No. 1 Smith, Plummer Chessman Sur. Comp.; gasser.
W. C. McBride, Inc. No. 1-B Smith, 20-ac. tr., sec. 33, Plummer Subd. R.U.

Strouch—Bee County

Dirks Bros. No. 1 Sinclair, 197-ac. tr., Uranga Gr. Drlg. 260 ft.

Alta Mesa—Brooks County

Standard of Texas No. 4 Mestina, Lse. No. 1. Set 7-in. csg. 2,434 ft.; W.O.C.; T.D. 2,445 ft.
Standard of Texas No. 5 Mestina, Lease No. 1. T.D. 1,302 ft.; set 9⅝-in. csg. 1,295 ft.; W.O.C.

Branyon—Caldwell County

Adams & Lyles No. 3 Ellison, D. Cooper Sur. Cg. 2,047 ft.
Blundell Oil Co. No. 2 Luce, J. Neill Sur. Sat. chalk 1,997-2,067 ft.; completing.
R. B. Byrd No. 1 McGee, J. A. Neal Sur. Drlg. 212 ft.
Easton & Manning No. 3 Lawler. Swbg. 2,265 ft.
J. W. Leonard No. 1 White, 800 ft. N Lockhart Townsite. T.D. 2,306 ft.; acidizing.
Taylor Pet. Co. No. 1 Caldwell County, 4-ac. tr., D. Cooper Sur. Drlg. 566 ft.
Webster O. & G. Co. and Commonwealth Oil Co. No. 1 McCrory, J. Neill Sur. Set csg. on chalk; completing.
Whisenant & Trenchard No. 1 Young, J. R. Miller Sur. T.D. 2,225 ft.; R.U. to pmp.

Dunlap—Caldwell County

Kay Oil Co. No. 1 Dunlap, S. Seale Sur. Set csg. 1,928 ft.; W.O.C.

Charamousca—Duval County

N. V. Duncan No. 6 Worden & Draught, Sur. 151. Sd. 1,523-29 ft.; tstg.
Magnolia Pet. Co. No. 3 D.C.R.C., Sur. 152. T.D. 1,771 ft.; D.&A.

Colmena—Duval County

J. L. Collins No. 1 D.C.R.C., Blk. 8, sec. 52. Sd. 1,460-67 ft.; comp.; 7,000,000 ft. gas; R.P. 500 lbs.
Conservative Oil Co. No. 3 Brown-Sentz, Blk. 12, sec. 51. Sd. 1,448-60 ft.; set csg.; W.O.C.
Wellington Oil Co. No. 5 D.C.R.C., Blk. 10, sec. 51. R.U.

Driscoll—Duval County

Continental Oil Co. No. 13-A Sevier, Sur. 448. T.D. 3,655 ft.; P.B. 3,555-84 ft.; comp.; 165 B.P.D.
Continental Oil Co. No. 14-A Driscoll-Sevier, Sur. 447. M.I.M.

Government Wells—Duval County

Magnolia Pet. Co. No. 1 Wendt, Sur. 56. Drk.
Magnolia Pet. Co. No. 17 Wilson, Sur. 248. D.&A. 2,668 ft.
Magnolia Pet. Co. No. 18 Wilson, Sur. 248. M.I.M.
Southwest Prod. Corp. No. 2 Luptack, SE¼, Sur. 41. R.U.

Hoffman—Duval County

Gorman & Yoakam No. 1 Hoffman, Sur. 117. D.&A. 3,003 ft.
Standard of Kansas No. 4 Green, Sur. 118. Sd. 2,831-35 ft.; comp.; 172 B.P.D.; T.D. 2,863 ft.

Kohler—Duval County

Chiquita Oil Co. No. 1 Peters, 162-ac. tr., Sur. 162. Drlg. wtr. well.
Clark & Cowden No. 3 Richardson, Sur. 5. Drlg. 3,077 ft.
Humble O. & R. Co. No. 1-A Peters, N½, NE¼, Sur. 397. Cg. sd. 3,085 ft.
Windsor Oil Co. No. 5-B Peters, Sur. 34. Loc.

Labbe—Duval County

Magnolia Pet. Co. No. 3 Labbe, 330 ft. N and E lines, Sur. 221. Sd. 2,863-71 ft.; T.D. 2,919 ft.; D.&A.

Loma Novia—Duval County

Bridwell Oil Co. No. 8-A Hahl, Blk. 28, Sur. 250. Cg. 2,417 ft.
F. J. Gravis No. 3 Hahl, Sur. 64. R.U.
Hamil & Smith No. 5 Ruiz, sec. 41. Sd. 2,598-2,603 ft.; tstd. S.W. and oil; rmg.
Humble O. & R. Co. No. 8 Vela, N½, sec. 42. T.D. sd. 2,655 ft.; W.O. pmp.
Humble O. & R. Co. No. 21-C Welder, Sur. 554. Drlg. sd. 510 ft.
Ed Leach No. 3 Wright, Sur. 92. D.&A. 2,663 ft.
Magnolia Pet. Co. No. 14 Herbst, sec. 70. R.U.
Texas Co. No. 24 Bishop, Sur. 57. Set csg. on sd. 2,570 ft.; W.O.C.
Texas Co. No. 4-B Ruiz, Sur. 41. T.D. 2,559 ft.; set csg. 2,554 ft.; W.O.C.

Lopez—Webb—Duval Counties

W. C. Billings No. 2 fee, Sur. 2. Recomp.; 125 B.P.D.; T.D. 2,301 ft.
Humble O. & R. Co. No. 16-C D.C.R.C., Sur. 901. T.D. 2,107 ft.; comp.; 18 B.P.D.
Humble O. & R. Co. No. 17-C D.C.R.C., Sur. 901. D.&A. 2,160 ft.
Humble O. & R. Co. No. 21-C D.C.R.C., Sur. 901. Drlg. 54 ft.
Kepley Prod. Co. No. 1 Billings, NW¼, Sur. 6. Drlg. 1,507 ft.
Mortimer & Springer No. 2 Community Tr., Sur. 114. R.U.
Mortimer & Springer No. 2 Valadez, Sur. 73. Sd. 2,269-73 ft.; comp.; 12 B.P.H.

Palangana—Duval County

F. J. Gravis No. 2-A Schallert, Sur. 255. Set sur. csg.; W.O.C.
Penn Palangana Oil Co. No. 3 C. K. Gravis, Sur. 250. Drlg. 717 ft.

Piedra Lumbre—Duval County

Magnolia Pet. Co. No. 16 D.C.R.C., Sur. 100. Swbg.; T.D. 1,986 ft.
Texas Co. No. 21 D.C.R.C., Sur. 100. T.D. (cor.) 1,990½ ft.; swbg. in.

Sarnosa—Duval County

Bowler & Borsodi No. 1 Sutherland, 80-ac. tr., sec. 126. D.&A. 2,852 ft.

Seven Sisters—Duval County

A. J. Brinkoeter No. 1 Garcia, Sur. 212. Sd. 2,646-56 ft.; S.O.; set csg. 2,639 ft.; R.U. to pmp.
Humble O. & R. Co. No. 10 Dowdy, Sur. 272. D.&A. 2,657 ft.
Humble O. & R. Co. No. 13 Dowdy, Sur. 272. Drlg. sd. 2,763 ft.
Humble O. & R. Co. No. 14 Dowdy, Sur. 272. Drlg. sh. 1,210 ft.
Texas Co. No. 11 Badgley, Sur. 307. Set csg. 2,502 ft.; W.O.C.; T.D. 2,512 ft.

Sweeden—Duval County

Hiawatha Oil Co. No. 1 Southland, sec. 15, Ball Ranch Subd. Drlg. 4,432 ft.

Pearsall—Frio County

Amerada Pet. Corp. No. 8 Halff & Oppenheimer, S. A. Ditch Sur. 1,104 (W.O.). Drlg. L. 8,586 ft.

Clark—Guadalupe County

Diamond Halff Oil Co. No. 2 Larison, G. DeWitt Sur. Spudded.
Kenedy & Crowley No. 1 Johns, Davis Sur. T.D. 2,507 ft.; completing.
D. Mulholland No. 1 Johns, J. K. Davis Sur. Spudded.

Darst Creek—Guadalupe County

J. E. Clark No. 1 Anderson, 8 mi. W of Seguin. Cg. 1,926 ft.
Diamond Halff Oil Co. No. 1 Bibbs, Robinson Sur. Top Edwards 2,852 ft.; drlg. 5,352 ft.
Freeman Oil Co. No. 3 Larrison, G. DeWitt Sur. T.D. 2,700 ft.; dry; P.B. 2,450 ft.; W.O.C.
Riddle Oil Co. No. 1 Williams, G. DeWitt Sur. R.U.
Saxet Prod. Co. No. 2 Wilson, G. DeWitt Sur. No. 13. Drlg. plugs in chalk.
V. G. Schimmel No. 2 Grimm, DeWitt Sur. T.D. 2,525 ft.; set csg. 2,383 ft.; W.O.C.
Watson No. 1 DeLancey, 400-ac. tr. Top chalk 2,020 ft.; S.O.; to acidize.

Nolte—Guadalupe County

Riddle Oil Co. No. 1 Herff, Gortari Sur. No. 76. T.D. 2,160 ft.; set csg. on 100-ft. sat. chalk; drlg. plug.
Riddle Oil Co. No. 2 Nolte, Lowell Sur. 16. Cg. 1,967 ft.
Wheelock & Collins No. 1 Warnecke, 335-ac. tr. R.U.

LaBlanca—Hidalgo County

Sterling O. & R. Co. No. 1 Engleman, 660 ft. N and E lines, Lot 8, Blk. 95. Perf. 7,860-80 ft.; comp.; 125 B.P.D. dist. and gas on ¼-in. ck.

Mercedes—Hidalgo County

Union Sulphur Co. No. 7 American Rio Grande, Tr. 2,309, Blk. 59 (workover). Perf. csg. 7,481-91 ft.; P.B. 7,592 to 7,513 ft.

Samfordyce—Hidalgo-Starr Counties

Barnsdall and Phillips No. 11 Yturria, E½, Porc. 100. Loc.
Ralp E. Fair, Inc., No. 1 Flores de Chapa, 10-ac. tr., Tr. 250, Porc. 39. D.&A. 3,144 ft.
Sun Oil Co. No. 1 Chapitol, Porc. 99. Cg. 2,835 ft.
Val-Tex Oil Co. No. 2 Chapa, Tr. 250, Porc. 39. Set csg.; T.D. 3,008 ft.; perf. 2,944-46 ft.; stdg.

Alworth—Jim Hogg County

French Oil Co. No. 3 Garza, Blk. 1, Sur. 261. Sd. 1,041-48 ft.; tstd. gas and S.W.; drlg. 1,077 ft.

Bentonville—Jim Wells County

LaJita Co. No. 3 Pope, sec. 20. Loc.
Texon Drlg. Co. No. 2 Ralston, 990 ft. N line, 330 ft. W line, sec. 17. Drk.

West Premont—Jim Wells County

Diamond Halff Oil Co. No. 1 Cupple, Lots 119 and 122, sec. 76. Sd. 2,357 ft.
Diamond Halff Oil Co. No. 1 Thirkel, Lots 66 and 79, sec. 77. Comp.; est. 200 B.P. D.; T.D. 2,275 ft.
C. G. Glasscock No. 1 Ritter, Lot 45, Haldeman Subd., sec. 76. W.O.; set csg. 3,306 ft.; sd. 3,170-76 ft.; comp.; 15 B.P.H. on ⅞-in. ck.
Gouger & Mode No. 1 Bennett, Lots 55 and 58, Haldeman Subd., sec. 76. Sd. 2,244-59 ft.; completing.
Tom Graham and Gilcrease No. 3-B Bennett, Sur. 76. Sd. 2,249-53 ft.; comp.; 102 B.P.D. on ⅞-in. ck.
T. Graham and Gilcrease Oil Co. No. 2 Laughlin, Lots 23 and 26, sec. 76. Swbg. in 3,100-ft. sd.
T. Graham and Gilcrease Oil Co. No. 3-B Laughlin, Lots 78 and 83, sec. 77. Cg. 2,225 ft.
Henshaw Bros. No. 1 McGuffin, W½, sec. 230. R.U.
Sloan & Cogswell No. 2 Nash, Lot 118, sec. 76. S.D. 2,362 ft.

Kingsville—Kleberg County

Humble O. & R. Co. No. 9 Kleberg, Lot 2, sec. 40. Sd. 3,218-28 ft.; D.S.T. rec. 210 ft. oil, 200 ft. oily mud; W.P. 54 lbs. in 24 min.; set csg.; W.O.C.

Oakville—Live Oak County

Simmons O. & G. Co. No. 1 McGriff, 150 ft. S and E lines, 94-ac. tr., Romero Sur. Set csg. 2,809 ft.; W.O.C.

Agua Dulce—Nueces County

Texon Drlg. Co. No. 2-B Sevier, 880-ac. tr., W. W. Chapman Lds., Palto Alto Gr. Set 16-in. csg. 300 ft.; T.D. 6,350 ft.; set csg.; pmpg. mud to kill wild No. 2; T.D. 6,465 ft.
United Prod. Co. No. 1 Harvey, 1,100 ft. W line, 1,050 ft. N line, tr., M. Garza Sur. Oil sd. 7,382-95 ft.; cap. 7,396-98 ft.; top S.W. sd. 7,398 ft.; drlg. 7,910 ft.
J. P. Walker et al No. 2 Ingram, Blk. 8, sec. 6, Ross Peters Subd. Cg. 3,717 ft.

Baldwin—Nueces County

Heyser & Heard No. 1 Kosar, 152-ac. tr., M. J. Cody Sur. Drlg. 3,486 ft.

Chapman Ranch—Nueces County

Seaboard & Allen No. 1-B Chapman, 1,980 ft. N line, 660 ft. W line, sec. 37. Drlg. 5,463 ft.
Seaboard Oil Corp. and Allen No. 4 Chapman, 660 ft. S line, 3,300 ft. W line, sec. 38. Drlg. 1,321 ft.

Clara Driscoll—Nueces County

Houston Oil Co. No. 1 Sevier, 330 ft. S and W lines, 77.1-ac. tr., Quadrilla Irr. Co. Sur. Loc.
Magnolia Pet. Co. No. 2 Sevier, 330 ft. S and W lines, 80-ac. tr., R. Russell Sur Sd. 5,439-42 ft.; tstd. S.W.; T.D. 5,800 ft.; S.D.
Magnolia Pet. Co. No. 3 Sevier, 80-ac. tr., Russell Sur. R.U.

Flour Bluff—Nueces County

Humble O. & R. Co. et al No. 2 Cordz, Lot 13, Blk. 48. T.D. 6,660 ft.; comp.; 169 B.P.D. on ⅛-in. ck.
Humble O. & R. Co. et al No. 2 Golden. Lot 19, Blk. 47. T.D. 6,680 ft.; set csg.; W.O.C.
Humble O. & R. Co. No. 2-B Miller, Blk. 21, sec. 48. Drlg. sh. 5,112 ft.
Humble O. & R. Co. et al No. 4-A Miller, Lot 19, Blk. 56. Set csg. 6,648 ft.; W.O.C.
Humble O. & R. Co. et al No. 2-A Solar Sevier, Lot 14, Blk. 47. T.D. sd. 6,663 ft.; comp.; 157.24 B.P.D.
Humble O. & R. Co. No. 1 Thompson. R.U.
Humble O. & R. Co. et al No. 3 Webster, Blk. 26, sec. 48. T.D. sd. 6,659 ft.; comp.; 117 B.P.D. on ⅛-in. ck.
Humble O. & R. Co. No. 4 Wells, Lot 9, sec. 47. R.U.

London—Nueces County

Cosner & Cosner No. 1 Stockton, 330 ft. N and E lines, SW¼, NE¼, sec. 25. Perf. 4,703-19 ft.; comp.; 8 B.P.H. on ⅞-in. in. ck.; set 7-in. csg. 4,707 ft.; T.D. 4,718 ft.
Cosner & Cosner No. 2 Stockton, 40-ac. tr., sec. 25. R.U.
Crown Central Pet. Corp. No. 1 Stockton, 330 ft. S and E lines, NW¼, NE¼, sec. 25. T.D. 4,786 ft.; D.&A.
Gem Oil Co. No. 1 Stockton, 330 ft. N and W lines, SE¼, NE¼, sec. 25. Sd. 4,551-

LEGAL

Department of the Interior, U. S. Land Office, Las Cruces, New Mexico. Notice is hereby given that the W½ W½ Sec. 24, W½ NW¼, SE¼ NW¼ Sec. 25, T. 26 S., R. 36 E., N.M.P.M., 280 acres, in the Eaves oil and gas field, New Mexico, is offered to the responsible qualified bidder of the highest bonus per acre for lease under Section 17 of the act of February 25, 1920 (41 Stat., 437), as amended by the act of August 21, 1935 (49 Stat. 674), at the royalty rate scale in the lease form shown in Circular 1386, at a sale to be held in the United States Land Office, Las Cruces, New Mexico, at 10 o'Clock, A.M., May 18, 1937. The minimum bid which will be accepted is $1.00 per acre. The land will be offered as a single unit. The successful bidder must deposit on the date of the sale a certified check on a solvent bank, or cash, for one-fifth of the amount and file the showing of qualifications to receive a lease required by Section 7 of Circular 1386. The remainder of the bonus bid and the annual rental at the rate of $1.00 per acre must be paid prior to the issuance of the lease. The bidders are warned against violation of the provisions of Section 59 of the United States Criminal Code approved March 4, 1909, prohibiting unlawful combination or intimidation of bidders. The right is reserved to reject any and all bids at the discretion of the Secretary of the Interior. Register.

56 ft.; tstd. S.W.; D.S.T. 4,716-23 ft.; rec. 250 ft. P.L.O.; set csg.; W.O.C.

Saxet Heights—Nueces County

Harrison Drlg. Co. No. 1 Simms, 4-ac. tr., Villareal Sur. T.D. 4,097 ft.; P.B. and sdtrkd. 3,928 ft.; set csg. in sdtrkd. hole 4,098 ft.; completing.

Ben F. Smith No. 1 Snowden, 13-ac. tr., Villareal Sur. R.U.

Taylor Pet. Corp. No. 2 Kaler, 10-ac. tr., Villareal Sur. Drlg. 4,780 ft.

Saxet—Nueces County

C. Anchade No. 9 McGregor-Belk, 130 ft. S line, 990 ft. E line, lse., Sur. 816. R.U.

Baltic Drlg. Co. No. 4 Harmon, Sur. 416. Cg. 6,756 ft.

Benson Drlg. Co. No. 1 Morgan, 330 ft. N and W lines, 40-ac. tr., Sur. 315 (W.O.). Old T.D. 4,483 ft.; R.U. to D.D.

Bentex Oil Co. No. 5 Harmon, 330 ft. S and W line, 50-ac. tr., Sur. 416. Cg. 6,972 ft.

R. B. Bryant No. 6 Frank, Sur. 416. T.D. 6,650 ft.; P.B. to sdtrk. 4,000 ft.; drlg. 4,820 ft.

Bryant & Howell No. 2 Morgan, Sur. 415. Drlg. 5,525 ft.

Conservative Oil Co. No. 3-B Morgan, Sur. 403. Oil sd. 6,914-28 ft.; set csg. 6,928 ft.; perf. 6,750 ft.; S.W.; perf. 4,048-52 ft.; recmtg.

A. D. Corgey No. 1 Page, 330 ft. S and E lines, 20-ac. tr., Sur. 716. Sd. 6,685-6,-715 ft.; set csg. 6,715 ft.; W.O.C.

Donico Prod. Co. No. 2 Donigan, 330 ft. W line, 2,004 ft. S line, 80-ac. tr., sec. 7, Rge. 6, Kinney Lds. Sd. 4,854-60 ft.; set csg.; W.O.C.

Donico Prod. Co. No. 4 Donigan, 60-ac. tr., Villareal Sur. Set sur. csg. 1,036 ft.; W.O.C.

Gilcrease Oil Co. No. 3 Sullivan, 140-ac. tr., Thos. Gallagher Sur. Set sur. csg. 150 ft.; W.O.C.

L. Glasscock No. 2 Johns, 20-ac. tr., MacGregor Sur. 582. M.I.M.

L. Glasscock No. 3 Hunter, 990 ft. N line, 330 ft. W line, 160-ac. tr., Dunn Sur. 312. Perf. 4,861-63 ft.; washing in.

Tom Graham No. 3 Harmon, 20-ac. tr., Sur. 416. Top sd. 6,303 ft.; cg. oil sd. 6,313 ft.

Great States Oil Co. and Violet Oil Corp. No. 7 McGregor-Belk, Sur. 311. D.S.T. 6,318-26 ft.; recd. 1,000 ft. oil, 90 ft. S.W.; sd. 6,208-26 ft.; set csg. 6,326 ft.; comp.; no gauge.

Great States and Violet No. 9 McGregor-Belk, 73.6-ac. tr., sec. 311. Drlg. 3,420 ft.

W. H. Harrison Drlg. Co. No. 1 Taggert, 50-ac. tr., Sur. 401. T.D. 5,160 ft.; S.D.; W.O.O.

Hiawatha Oil Co. No. 8 Hutchins-Stillwell, Lot 30, Sheppard Farm Lds. Drlg. 3,-765 ft.

Hiawatha Oil Co. No. 9 Hutchins-Stillwell, Lot 34, Sheppard Lds. Fsg. core bbl.; sd. 6,719-37 ft.

Hiawatha Oil Co. No. 4-B Smith, Sheppard Farm, Lot 35. Set csg. 1,136 ft.; W.O.C.

Houston Oil Co. No. 2 fee, Sur. 582. Set csg. on sd. 5,812 ft.

Houston Oil Co. No. 21 Morgan, sec. 7, Rge. 5. Sd. 4,417-23 ft.; comp.; 33.8 B. P.H.

Houston Oil Co. No. 22 Morgan, sec. 7, Rge. 5. Drlg. sh. 997 ft.

Houston Oil Co. No. 24 Morgan, sec. 7, Rge. 5. Drk.

H. H. Howell No. 4 Hutchins, 80-ac. tr., Sur. 416. Drlg. 1,420 ft.

H. H. Howell No. 2 Morgan, Blk. 3, NW¼, Sur. 415 (cor.); drlg. deeper 5,753 ft.

Kepley Prod. Co. No. 3 Donigan, 100-ac. tr., sec. 7, Rge. 5. Sd. 4,861-69 ft.

Maryland Corp. No. 1 Carson, 7-ac. tr., Sur. 416. O.W.W.O.; old T.D. 5,843 ft.; cg. sh. 6,920 ft.

Morgan & Chapman Minerals No. 6 Morgan Clark, NE¼, Sur. 405. Drlg. 5,-265 ft.

North Star Oil Co. No. 11 Rand Morgan, 80-ac. tr., Sur. 405. Drlg. 4,125 ft.

Pan American Prod. Co. No. 5-C Morgan, E½, SW¼, Sur. 405. Drlg. 6,557 ft.

Pan American Prod. Co. No. 6-D Morgan, Sur. 405. Drlg. 2,920 ft.

Pan American Prod. Co. No. 2 Solar Sevier, Sur. 582. Drlg. 5,760 ft.

LEGAL

U. S. Department of the Interior, General Land Office, Washington, D. C. Notice is hereby given that Unit No. 1 embracing SW¼ SW¼ Sec. 4, T. 23 N., R. 15 W., 40 acres, and Unit No. 2, embracing NW¼ SW¼, S½ SW¼, SW¼ SE¼, Sec. 6, T. 23 N., R. 15 W., 113.38 acres, in the Rodessa Oil and Gas Field, Caddo Parish, Louisiana, are offered to the responsible qualified bidder of the highest bonus per acre, the minimum bid being $1 per acre, under section 17 of the leasing act of February 25, 1920 (41 Stat. 437), as amended by the act of August 21, 1935 (49 Stat. 674), at the royalty rate scale in the lease form shown in Circular 1386, at a sale to be held in the Federal Court Room, Post Office Building, Shreveport, Louisiana, at 12:00 noon, on April 23, 1937. The successful bidder must deposit on the day of the sale a certified check on a solvent bank, or cash, for one-fifth of the amount of each bid and file the showing of qualifications to receive a lease required by section 7 of General Land Office Circular 1386. The remaining four-fifths, together with the annual rental in advance at the rate of $1 per acre must be paid prior to the issuance of the lease. The bidders are warned against violation of the provisions of section 59 of the United States Criminal Code approved March 4, 1909, prohibiting unlawful combination or intimidation of bidders. The right is reserved to reject any and all bids at the discretion of the Secretary of the Interior. (Signed) Fred W. Johnson, Commissioner.

Phillips Pet. Co. No. 1 Frank, 27.5-ac. tr., Sur. 500. R.U.

Port O. & G. Co. No. 3 Cox & Cryder. Drlg. 3,820 ft.

Potter & Snowden No. 1 Kocurek, 26-ac. tr., Sur. 25. Set 5½-in. csg. at T.D. 4,-209 ft.; W.O.C.

Potter & Snowden No. 1 Taggert, Blk. 5, Sur. 401. Set csg. 1,000 ft.; W.O.C.

Renwar & Maryland No. 1-A Rand Morgan, Sur. 415. O.W.W.O.; R.U. to deepen; old T.D. 5,825 ft.

Republic Nat. Gas Co. No. 2 McCampbell, 144-ac. tr. Spudded.

Republic Nat. Gas Co. No. 3-A Morgan, sec. 405. Drlg. 1,780 ft.

Republic Nat. Gas Co. No. 3 Walton, 40-ac. tr., Page Lds. Sur. Set condr. csg.; W.O.C.

Richardson Pet. Co. No. 7 Cain & Secrist, Blk. 23, Russell Farm Lots. Sd. 4,425-33 ft.; set csg.; completing.

Richardson Pet. Co. No. 9 Cain & Secrist, Blk. 23, Russell Farm Lots. Sd. 4,454-60 ft.; comp.; 432 B.P.D. on ¾-in. ck.

Richardson Pet. Co. No. 13 Cain & Secrist, Russell Farm, Lot 23. Drlg. 2,-920 ft.

Richardson Pet. Co. No. 3 Erigan, 10-ac. tr., Sur. 311. Sd. 5,821-31 ft.; set csg. 5,831 ft.; comp.; 256 B.P.D. on ⅞-in. ck.

Richardson Pet. Co. No. 2 Hoelscher, Blk. 22, Russell Farm Trs. Set 10-in. csg. 519 ft.; W.O.C.

Richardson Pet. Co. No. 8 Quiros, Blk. 36, Sheppard Farm Trs. Set 10-in. csg. 1,375 ft.; W.O.C.

Richardson Pet. Co. No. 9 Quiros, Blk. 36, Sheppard Lots. Drlg. 5,026 ft.

Southern Minerals Corp. No. 20 Bliss, 120-ac. tr., Sur. 416. Set csg. 1,119 ft.; W.O.C.

Southern Minerals Corp. No. 5 Mastin, Sur. 416. Sd. 6,887-97 ft.; D.S.T. 6,907-21 ft.; rec. 1,500 ft. P.L.O. in 15 min.; set csg.; comp.; 142 B.P.D. on ⅛-in. ck.

Southern Minerals Corp. No. 13 Smith, Blk. 4, Sheppard Trs. Set csg. 4,550 ft.; comp.; 123.28 B.P.D. on 5/32-in. ck.

Stamex O. & G. Co. No. 1 Cox & Cryder, lse., Surs. 166 and 316. O.W.W.O.; old T.D. 4,643 ft.; P.B. to sdtrk. 2,500 ft.

Texon Drlg. Co. No. 5 Vance, Thos. Gallagher Sur. T.D. 7,000 ft.; sdtrkd. 6,-400 ft.; sd. 6,914-20 ft.; perf. csg. 6,913-17½ ft.; completing.

Stratton—Nueces County

Camp Prod. Co. No. 1 Wordner, 330 ft. E line, 1,280 ft. N line, sec. 12, Stratton Subd. Cg. sh. 6,127 ft.

Sullivan—Nueces County

Invincible Oil Co. No. 1-B Elliff, 406 ft. S and W lines, 160-ac. tr., Longorio Gr. Drlg. 5,661 ft.

Plymouth—San Patricio County

Humble O. & R. Co. No. 1 Blaschke & Mayo, Lot 8, sec. 25. Sd. 5,530-35 ft.; cleaning in tanks.

Magnolia Pet. Co. No. 12 C. C. Bank, 466 ft. N and E lines, Fessenden Sur. Drlg. 5,725 ft.

Plymouth Oil Co. No. 70-C Welder, sec. 71. T.D. 5,643 ft.; comp.; 169.68 B.P.D. on ⅛-in. ck.; sd. 5,628-41 ft.

Plymouth Oil Co. No. 71-C Welder, sec. 71. Drlg. 1,200 ft.

Plymouth Oil Co. No. 72-C Welder, 8,411 ft. S line, 797 ft. E line, sec. 71. Sd. 5,602-19 ft.; comp.; 180.35 B.P.D. on ⅛-in. ck.

Plymouth Oil Co. No. 73-C Welder, sec. 71. Set csg. 352 ft.; drlg. 710 ft.

Taft Field—San Patricio County

Cage Prod. Co. No. 7 Mayo, 9,560 ft. W line, 990 ft. S line, 60-ac. tr., Ottman Sur. Sd. 4,360-68 ft.; comp.; 90 B.P.D. on 9/64-in. ck.

Esves Oil Co. No. 4 Britton, Lot 8, sec. 6, Third Addn. Set csg. 4,008 ft.; S.D.

Esves Oil Co. No. 7 Britton, sec. 6. Cg. 4,937 ft.

Humble O. & R. Co. No. 1 Blaschke & Mayo, Lot 8, sec. 25. Drlg. sd. 6,195 ft.

Humble O. & R. Co. No. 19 Mayo, Ottman Sur. Sd. 4,918-29 ft.; comp.; 93.27 B.P.D. on 7/64-in. ck.

Humble O. & R. Co. No. 21 Mayo, Ottman Sur. Cg. in tank; T.D., sd. 3,986 ft.

Shell Pet. Corp. No. 6 Pullin, sec. 1, Second Addn. Cg. 4,957 ft.

Margo—Starr County

Dolgener et al No. 1 Garcia, 10-ac. tr., Sh. 7-B, Porc. 71. Drlg. 337 ft.

Ricaby—Starr County

Moss & Heard No. 3 Ricaby, Porc. 83, J. of Camargo. Sd. 1,604-11 ft.; tstd. oil and mud; set csg. 1,602 ft.; comp.; no gauge.

Barbacoas—Starr County

K. E. Merren et al No. 1 S.C.C.C., Blk. 34, Porc. 89. T.D. 5,380½ ft.; sd. 5,377-80½ ft.; cutting and pulling drill pipe.

Los Olmos—Starr County

H. C. Owens No. 1 Ivey, Porc. 87. D.&A.

Ted Stone No. 1 Kelsey-Bass, Porc. 87. J. of Camargo. Set 6-in. csg. 393 ft.; D.&A.

Rio Grande City—Starr County

Clopton & Reed No. 1 Green, Porc. 80. T.D. 4,600 ft.; S.G.; P.B. 1,684 ft.; set csg.; W.O.C.

Clopton & Reed No. 4 Tijerina, Lot 12, Sh. 14-C, Porc. 80. Cg. 1,423 ft.

Aviator—Webb County

Joe Palmer No. 1 Garcia, Sur. 463. R.U.

Cole—Webb County

O. W. Killam No. 50 Bruni, C Blk. 10, Sur. 8, Foltz Subd. Sd. 3,417-31 ft.; tstd. oil; set csg.; W.O.C.

O'Hern—Webb County

Magnolia Pet. Co. No. 19 Benavides, Hale Subd. T.D. 2,932 ft.; comp.; 100 B.P.D.

Magnolia Pet. Co. No. 20 S. Benavides, Hale Subd. Drlg. 256 ft.

Magnolia Pet. Co. No. 23 Benavides, Blk. 1, O'Hern & Seacord Subd. D.&A. 2,-955 ft.

Magnolia Pet. Co. No. 24 S. Benavides, Hale Subd. Set sur. csg.; W.O.C.

J. J. O'Hern No. 2-C Benavides, Blks. 24 and 25, Hale Subd. Top sd. 2,690 ft.; comp.; 105 B.P.H.; open tbg.; T.D. 2,-880 ft.

H. M. Reed No. 4 Benavides, Blk. 299, Hale Subd. Swbg. 2,916 ft.

Starr Dev. Co. No. 1 Benavides, 330 ft. N and W lines, Sur. 173. M.I.M.

Sun Oil Co. No. 6-A Benavides, Blk. 377. Comp.; 150 B.P.D.; T.D. 2,936 ft.

LaSal Vieja—Willacy County

Shell Pet. Corp. No. 1 Yturria, Sh. 64, Carricitos Gr. (W.O.); set csg. 7,630 ft.; cg. sh. 8,527 ft.

Byersville—Williamson County

Taylor Ref. Co. No. 7-B Heap, H. White Sur. Spudded.

Charco Redondo—Zapata County

W. C. Bob No. 2 Martinez, S¼, Blk. 22, Quandado Gr. Sd. 670-72 ft.; set csg.; M.I.R.

Cuellar—Zapata County

Magnolia Pet. Co. No. 3 Cuellar, Sur. 245. Drlg. 1,027 ft.

Magnolia Pet. Co. No. 2 Gonzalez, Cerrito Blanco Gr. Sd. 1,120-32 ft.; comp.; 12,-000,000 ft. gas; R.P. 400 lbs.

Escobas—Zapata County

Allied O. & G. Co. No. 6 Santos, Sh. 6, Fansler Part. Loc.

Sam Evans No. 3 Garcia, Blk. 19, Douglas Subd. Sd. 1,333-48 ft.; comp.; 72 B. P.D.

Sam Evans No. 4 Garcia, Blk. 19, Douglas Subd. Drlg. 1,147 ft.

E. Calloway No. 2 Bustamente, Sh. 35, Fansler Part. T.D. 1,224 ft.; comp.; 40 B.P.D.

E. Calloway No. 5 Garcia, Sh. 3, Fansler Part. T.D. 1,043 ft.; comp.; 30 B.P.D.

Texas Co. No. 98 Jennings, Cerrito Blanco Gr. T.D. 1,348 ft.; comp. 72 B.P.D.

Zapata Corp. No. 1 Garza, Blk. 22, Douglas Subd. No report.

Zapata Corp. No. 14 Garza, Blk. 21, Douglas Subd. Comp.; 75 B.P.D.; T.D. 1,141 ft.

Haynes—Zapata County

Geo. Buck No. 4 Haynes, Blk. 14, Haynes Subd. Comp.; 50 B.P.D.; T.D. 1,160 ft.

Geo. Buck No. 5 Haynes, Blk. 14, Haynes Subd. D.&A. 1,160 ft.

Evans, Mins & Long Bros. No. 1 Garza, Blk. 88, Douglas Subd. Cg. 1,127 ft.

Valley Osage Oil Co. No. 1-B Haynes, Blk. 14, Haynes Subd. Drlg. 1,120 ft.

Lopena—Zapata County

Dalport Oil Corp. No. 1 Vela, Porc. 20. Drlg. 312 ft.

Wm. H. Winn No. 2 Vela, Blk. 6, Porc. 20. T.D. 2,408 ft.; comp.; 20,000,000 ft. gas.

E. C. TEXAS WILDCATS

Anderson County

American Liberty Oil Co. No. 1 G. E. Gauge, Blackfoot area, B. Gilbert Sur. Top Paluxy 6,758 ft.; top Glenrose 7,029 ft.; top Anhy. 8,080 ft.; drlg. 8,250 ft.

Tide Water Oil Co. et al No. 7 Monnig, S. Sanchez Sur., deep test, Long Lake field. S.D. 8,855 ft.; to make D.S.T.

Angelina County

Hicks et al No. 1 Morris, J. Morris Sur., 3 mi. E of Dibol. S.D. 2,186 ft.

B. F. Hoffman No. 1 So. Pine Lbr. Co., B. J. Thompson Sur., C of SE¼ of Blk. 11, NE of Dibol. Fsg. 2,236 ft.

Bowie County

Thompson & Jaffie No. 1 R. Rosalind, J. Milam Sur., 3 mi. SW of Redwater. Drk.

Cherokee County

J. G. Mayo Oil Co. No. 1 J. E. Bailey in J. H. Russell Sur., 2½ mi. W of Lone Star. Drlg. 2,512 ft.

A. F. Richardson No. 1 F. P. O'Brien, G. S. Clapp Sur., 3 mi. NW of Rusk; 5,000-ft. test. Loc.

Falls County

H. H. Bell et al No. 1 A. Garrett, J. M. Sanches Sur. Drlg. 332 ft.

Fannin County

Joiner & Owens No. 1 Goss-Morgan, J. Stephens Sur., 16 mi. N of Honey Grove. S.D. 2,810 ft.

Moore & Scarborough No. 1 Fuller. S.D. 3,410 ft.

Freestone County

C. F. Lytle No. 1 R. Simmons, 23-ac. tr., R. B. Loughbotham Sur., 1 mi. S of Wortham. Cg. 2,912 ft.

Stroude et al No. 1 P. Mullens, R. D. Sloan Sur., 6 mi. NE of Fairfield. Spd. and S.D.

Henderson County

Tide Water et al No. 1 McElreath & Suggett. Top Georgetown 4,990 ft.; top Paluxy 6,005 ft.; top Glenrose 6,270-80 ft.; S.D. 7,195 ft.; blew in with high gas volume and little oil.

Hopkins County

Rio Oil Co. No. 1 R. A. Logan, A. Wetmore Sur. Drlg. 1,722 ft.

Houston County

American Liberty Oil Co. No. 1 Bean, A. Evans Sur., NW of Grapeland. T.D. 6,257 ft.; P.B. to 6,036 ft.; making gas and wtr.

Placid Oil Co. No. 1 Elliott in J. Procella Sur., 5½ mi. NE of Grapeland. Coring 6,281 ft. in Woodbine.

Hunt County

Penn Oil Corp. No. 1 R. B. Parish, C 100-ac. tr., N. Dauley Sur., 7 mi. NE of Lone Oak. S.D. 4,711 ft.

Stanolind O. & G. Co. No. 1 J. P. Hawks, R. Ragsdale Sur., near Campbell. Drk.

Texola Land Corp. No. 1 J. M. Goin, Jas. Merrick Sur., 2 mi. SW of Wolfe City. S.D. 40 ft.

Kaufman County

Scott & Woodside No. 1 W. and T. Nash, in J. Cortez Sur., 1 mi. E of Scurry. R.U.

Lamar County

Lowery-Cutler No. 1 E. C. Porter, Thos. King Sur. Top Georgetown 354 ft.; S.D. 1,647 ft.

Limestone County

A. W. Phillips et al No. 1 E. M. Speight, M. Herrin Sur., 6½ mi. SE of Mexia. S.D. 3,695 ft.

Pure Oil Co. No. 16-T Kendrick, P. Varella Sur., Mexia field. Top Woodbine 2,896 ft.; drlg. 2,957 ft.

Red River County

Roy I. Carter Drlg. Co. No. 1 J. A. Tutt, C 40-ac. tr. in D. Hart Sur., 2 mi. S of Avery. S.D. 410 ft.

Van Zandt County

Humble O. & R. Co. No. 1 L. K. Riggs, W. Daniels Sur. Deep test; top Georgetown 3,725 ft.; top Paluxy 4,645 ft.; T.D. 4,-664 ft.; sdtrkg. hole.

Wood County

B. F. Phillips No. 1 L. E. Pritchard, T. Craddock Sur., 4 mi. S of Winnsboro. Top Woodbine 5,080 ft.; cg. 5,146 ft.

Robertson et al No. 1 E. A. Russell, in J. A. DeLap Sur., 5 mi. S of Alba, is old G. W. Nix well. T.D. 600 ft.; C.O.

EAST TEXAS

(Border Counties)

Bowie County

Ferguson & Hill No. 1 Breckenridge, N. Dysas Sur. S.D. 2,605 ft. fuel, cor.

Sutton-Hawkins No. 1 McDuffey, John Ball Sur. T.D. 5,020 ft.; fsg. for D.S.

Thompson & Jaffee No. 1 Rosemond, J. Milan Sur. Drk.

Cass County

American Liberty No. 1 B. E. Echlos, H. Holbert Sur. Drlg. 5,450 ft.

Arkansas-Louisiana No. 1 George, Wm. R. Myers Sur. Drlg. 3,130 ft.

P. L. Hoffman No. 3 Davis, J. S. Smith Sur. Drlg. 3,980 ft.

Magnolia No. 3 Allday Est., P. Evans Sur. 7-in. 5,948 ft.; T.D. 5,968 ft.; W.O.C.S.

Magnolia No. 11 J. E. George, John Collum Sur. Drlg. 5,853 ft.

Magnolia No. 13 J. E. George, John Collum Sur. Drlg. 5,303 ft.

Magnolia Pet. No. 3 W. M. Hall, Wilson Robinson Sur. Drk.

Magnolia No. 1 Hayer & Thatcher, Jacob Carsner Sur. T.D. 6,094 ft.; tstg.

Magnolia No. 9 L. Haywood, P. Evans Sur., SE cor. 7-in. cmtd. 5,948 ft.; T.D. 5,970 ft.

Magnolia No. 10 L. Haywood, SW cor. lse., P. Evans Sur. 7-in. cmtd. 5,956 ft.; T.D. 5,975 ft.

Magnolia No. 11 L. Haywood, SE cor. P. Evans Sur. 7-in. cmtd. 5,935 ft.; T.D. 5,952 ft.

Magnolia Pet. Co. No. 12 L. Haywood, P. Evans Sur. 7-in. cmtd. 5,966 ft.; T.D. 5,987 ft.

Magnolia Pet. Co. No. 13 L. Haywood, P. Evans Sur. Drlg. 5,828 ft.

Magnolia Pet. No. 14 L. Haywood, P. Evans Sur. Drk.

Magnolia Pet. No. 15 L. Haywood, P. Evans Sur. Drk.

Magnolia Pet. No. 17 L. Haywood, P. Evans Sur. R.U.

Magnolia No. 6 W. M. Hall, John N. Jackson Sur. Drlg. 3,313 ft.

Magnolia Pet. Co. No. 8 Lewis and Wicks, Alex Archer Sur. 7-in. cmtd. 6,026 ft.; T.D. 6,055 ft.

Magnolia Pet. Co. No. 1 J. B. McLeod, Cass Co. Sch. Ld. Sur., NW cor. sur. Loc.

R. W. Norton No. 3 Davis, H. Holbert Sur. Comp.; flw. 14 B.P.H.; T.D. 6,000 ft.

R. W. Norton No. 6 Davis, H. Holbert Sur. Drlg. 2,751 ft.

R. W. Norton No. 7 Davis, H. Holbert Sur. Drlg. 3,752 ft.

Ohio Oil Co No. 13 R. P. Willis, S.F.I.W. Sur. No. 1,263. Drk.

Ohio Oil Co. No. 16 R. P. Willis, S.F.I.W. Sur. 1263. Comp.; flw. 374 B.P.D.; T.D. 5,958 ft.

Ohio Oil Co. No. 17 R. P. Willis, S.F.I.W. Sur. No. 1263. 7-in. cmtd. 5,968 ft.; T.D. 5,986 ft.; W.O.C.S.

Texas Co. No. 8 McLeod, W. A. Elliott Sur. Tstg.; T.D. 6,110 ft.

Texas Co. No. 2 N. A. Rambo, Cass Co. Sch. Lr. Sur. 7-in. cmtd. 6,000 ft.; T.D. 6,011 ft.; W.O.C.S.

Texas Co. No. 5 N. A. Rambo, Cass Co. Sch. Ld. Sur. Comp.; flw. 432 B.P.D.; T.D. 6,093 ft.

Texas Co. No. 7 N. A. Rambo, Cass Co. Sch. Ld. Sur. Drlg. 5,772 ft.

United Prod. Co. No. 1 Allday, P. Evans Sur. Drlg. 5,835 ft.

United Prod. No. 6 Baugus Unit, R. Trammel Sur. Drlg. 1,876 ft.

United Prod. No. 1 Belote, H. Holbert Sur. Drlg. 5,001 ft.

United Prod. No. 1 Bivens, John Collum Sur. Drlg. 5,880 ft.

United Prod. Co. No. 2 Bivens Unit, Jas. Davenport Sur. T.D. 6,021 ft.; S.D. W.O.

United Gas No. 3-A J. A. Bewley, H. Holbert Sur. Drlg. 4,337 ft.

United Prod. No. 4 J. A. Bewley, H. Holbert Sur. 7-in. cmtd. 5,960 ft.; T.D. 6,000 ft.

United Prod. Co. No. 1 Davis Unit, Cass Co. Sch. Ld. Comp.; gas well; T.D. 5,732 ft.

United Prod. No. 2 J. Q. Clements, Wm. B. Hughes Sur. Drlg. 1,440 ft.

United Prod. No. 1 J. S. Hall, Wm. Robinson Sur. Drlg. 3,940 ft.

United Prod. No. 2 J. S. Hall, Wm. Robinson Sur. Drlg. 3,008 ft.

United Prod. No. 3 J. S. Hall, Wm. Robinson Sur. Drlg. 3,726 ft.

United Prod. Co. No. 1 Kate, Spell Unit, C. C. Sch. Ld. Sur. Drlg. 3,900 ft.

United Prod. Co. No. 1 J. W. Land, R. Potter Sur. Cg. 6,711 ft.

United Prod. No. 1 R. O. Long, W. Robinson Sur. Drlg. 5,645 ft.

United Prod. No. 1 Terry Unit, R. Potter Sur. T.D. 5,660 ft.; tstg., gas well.

Vaughn Prod. Co. No. 1 Willis, S.F.I.W. Sur. 1263. Cg. 5,930 ft.

Harrison County

H. H. Alvord et al No. 1 M. A. Flannagan, L. Wormack Sur. T.D. 2,440 ft.; W.O. S.R.

Gever Oil Co. No. 1 Moore, Fields Sur. R.U.

Gever Oil Co. No. 2-B Vincent, Davenport Sur. T.D. 2,135 ft.; S.D.

Highway 80 Oil Co. No. 1 George Powell Sur. T.D. 825 ft.; S.D.

Midfield Oil Co. No. 1 Lane & Greer, Baker Sur. T.D. 2,338 ft.; reacidized and tstg.

Patsam Oil Co. No. 2 Z. Douglas, S. Fields Sur. T.D. 2,520 ft.; tstg.

Marion County—Rodessa

Arkansas-Louisiana No. 1 C. C. Braden, T. Hanson Sur. R.U.

Arkansas-La. No. 1 W. S. Ford, Charles Grayson Sur., NE cor. Ford 204-ac. tr. T.D. 6,181 ft.; flw. and tstg.

Arkansas-La. No. 1 Laura McIntosh, Edmondson Sur. T.D. 6,101 ft.; reperf. and tstg. gas; prep. D.D.

F. R. Freet et al No. 1 Barnham, R. Potter Sur. Drk.

Holcomb & Thomason No. 1 Lizzie Henderson, 330 ft. S and E, cor. Blk. 18, of Lizzie Henderson Subd., or 2,800 ft. S. 3,450 ft. E of NW cor. of R. Bennington Sur. T.D. 5,996 ft.; tstg. with various size cks.; flw.

Hunter Co. No. 1 E. W. Fonda, A. D. S. Coy Sur. Drlg. 2,345 ft.

Morefield & Prine No. 1 Bennington, R. Potter Sur. T.D. 940 ft.; W.O.S.R.

Morefield & Prine No. 2 Potter, R. Potter Sur. T.D. 960 ft.; W.O.S.R.

Morefield & Prine No. 2-B Potter, R. Potter Sur. Drk.

Panola County

Danciger O. & R. No. 1 Tatum, A. Bissell Sur. R.U.

R. H. Dearing & Sons No. 1 Wooten Est., W. Mann Sur. R.U.

Magnolia Pet. Co. No. 2 E. A. Hull, Thos. Applewhite Sur. Drlg. 4,600 ft.

Logansport P. L. Corp. No. 1 Rushing, M. Smith Sur. T.D. 2,920 ft.; shows oil; rng. liner.

Shelby County

Wm. Redditt No. 1 Pickering Lbr. Co., SE cor. Stephens English Sur. S.D. 2,165 ft.; laying fuel line and prep. to D.D.

H. A. Stebbinger No. 1 Pickering Lbr. Co., on 160-ac. tr. in A. Hanson Sur. Drlg. plug and prep. test shows oil and gas; T.D. 3,052 ft.; hole clean; prep. D.D.

WEST TEXAS WILDCATS

Andrews County

Botkins & Barron No. 1 Kemp, R.U.S.T.

M. S. Forgeron et al No. 1 Lockhart & Brown, C NE¼ sec. 20, Blk. A-41, P.S.L. Sur. R.U.

Sinclair Prairie Oil Co. No. 1 Emma Cowden, sec. 11, Blk. 44, Twp. 2n, T.&P. Sur. Loc.

G. F. Getty, Inc., No. 1 R. H. Lindley, sec. 8, Blk. A-46, Drlg. 4,715 ft.

Hargrove et al No. 1 Riordan, NW¼, sec. 10, Blk. A-44, P.S.L. Spudded.

Landreth Prod. Co. No. 1 L. Jones, sec. 11, Blk. A-42, P.S.L. Sur. R.U.R.

Standard of Texas No. 1 Gray Estate, sec. 21, Blk. A-42, P.S.L. Sur. Drlg. 3,242 ft.

Bailey County

E. L. Wilson et al No. 1 Blank, Labour 4, Abner Taylor League 700. M.I.R.

O. B. Greathouse No. 1 W. E. Friend, sec. 3, W. Allen Sur. R.U.

J. C. Hill et al No. 1 Ely, sec. 38, Blk. 71, P.S.L. Sur. Cellar.

Brewster County

F. C. Dodson No. 1 Texas American Synd., sec. 66, Blk. 10, G.H.&S.A. Sur. S.D. 4,026 ft.

Cochran County

Bond & Harrison No. 1 Dean, Labour 1, League 85, Greer Co. School Lands. W.O.C. 4,515 ft.

Pete Wiggins et al No. 1 C. Slaughter Dean, C Lab. 26, League 92, Lipscomb Co. School Ld. Loc.

Coke County

H. E. Ogden et al No. 1 Rawlins. Cellar.

Choate & Hogan No. 1 C. B. Haun, sec. 88, Blk. 1, I.&G.N. Sur. R.U.S.T.

Plymouth Oil Co. No. 1 Mrs. Mary Hanna, sec. 252, Blk. LA, H.&T.C. Sur., 1½ mi. SW of Blackwell. Drlg. 800 ft.

Crane County

Gulf Oil Corp. No. 2 McKnight, sec. 9, Blk. B-21. Drlg. 4,500 ft.

Sinclair Prairie Oil Co. No. 1 University, sec. 13, Blk. 35. Drlg. 3,422 ft.

Crockett County

Superior Oil Co. of Calif. No. 1 J. S. Todd, C SE¼ sec. 55, Blk. UV, G.C.&S.F. Sur. Drlg. 2,500 ft.

Dawson County

E. L. Wilson et al No. 1 Texas Ld. & Mtg. Co., 1,980 ft. from S and E. sec. 45, Blk. M. E.L.&R.R. Sur. R.U.R.

Ector County

Bond & Harrison No. 1 Rumsey, sec. 35, Blk. 45, Twp. 1n, T.&P. Sur. T.D. 4,265 ft.; testing.

Edwards County

Dan Auld et al No. 1 Rigsby, sec. 16, Blk. OK. G.C.&S.F. Sur., 15 mi. NE of Rock Springs. Drlg. 771 ft.

Fisher County

L. A. Daniels et al No. 1 J. J. Nickless. Drlg. 2,939 ft.

Forrest Dev. Co. No. 1 J. A. Scott, sec. 105, Blk. 2, H.&T.C. Sur. Coring 4,457 ft.

Martin & Brubaker No. 1 Brown, W. E. Richardson Sur., sec. 4, Blk. R. Drlg. 2,905 ft.

Southern Oil Co. No. 1 Robinson, sec. 172, Blk. 2, H.&T.C. Sur., 2½ mi. NE of Raton. S.D. 3,100 ft.

Gaines County

A. G. Carter No. 1 A. L. Wasson et al, sec. 48, Blk. AX, P.S.L. Sur. T.D. 3,092 ft.; trying to kill gas.

T. N. Sloan et al No. 1 Barber, NE cor. sec. 19, Blk. A-28, P.S.L. Sur. R.U.R.

Garza County

S. Caprito No. 1 Post Estate, sec. 230, Blk. 5, K. Avcock Sur. Drlg. 2,839 ft.

Glasscock County

Fleetborn Oil Co. No. 1 Black Arrow, sec. 3, Blk. 34, Twp. 3s, T.&P. Sur. S.D. 3,000 ft.

Hockley County

Texas Co. No. 1 B. Slaughter, Labour 83, League 38, Zavala Co. Sch. Lds. T.D. 5,030 ft.; P.B. to 5,023 ft.; heading.

Howard County

Moore Bros. No. 1 T.&P. Land Trust, sec. 33, Blk. 30, Twp. 1s, T.&P. Sur. Drlg. 2,382 ft.

Shasta Oil Co. No. 1 Cora Echols, sec. 5, Blk. 15, T.&P. Sur. Drlg. 2,411 ft.

R. A. Westbrook et al No. 1 G. T. West, sec. 48, Blk. 33, Twp. 1n, T.&P. Sur. S.D. 1,460 ft.

Hudspeth County

Haymon Krupp Oil & Ld. Co. No. 1 Thaxton, SE¼ sec. 34, Blk. 74, Twp. 6. Fsg. 3,040 ft.

Jones County

T. K. Simmons No. 1 E. A. Hicks, sec. 5, O. A. Lands Sur. S.D. 2,226 ft.

Loving County

Finley et al No. 1 W. D. Johnson, sec. 24, Blk. 56, Twp. 1, T.&P. Sur. M.I.M.

Mason Oil Co. No. 3 Kyle, sec. 20, Blk. 55, Twp. 1, T.&P. Sur. Drlg. 3,051 ft.

Standard O. & G. Co. No. 1 M. Kyle, sec. 20, Blk. 55, Twp. 1, T.&P. Sur. Drlg. 2,176 ft.

Mitchell County

Mitchell O. & G. Co. No. 1 Z. Morrison, sec. 36, Blk. 29, Twp. 1n, T.&P. Sur. Drlg. 363 ft.

Pecos County

Adams & Black No. 1 Masterson, sec. 71, Blk. 10, H.&G.N. Sur. Drlg. 635 ft.

Bahan & Rhodes No. 1-B Bonebrake, sec. 116, Blk. 8, H.&G.N. Sur. Drlg. 2,417 ft.

Cannon & Cannon No. 1 University, sec. 2, Blk. 20. Loc.

Dobbs No. 1 University, sec. 30, Blk. 18. Spd. and S.D.

Hightower Oil Corp. No. 1 Holmes, sec. 6, Blk. C-3, E.L.R.R. Sur. T.D. 2,694 ft.; C.O.

Humble O. & R. Co. No. 1 E. M. Gray, sec. 94, Blk 11, G.H.&S.A. Sur.; 5,000-ft. test. T.D. 3,545 ft.; ran csg.

Humble O. & R. Co. No. 1 Tippett, sec. 537, T.I.&M. Sur. S.D. 1,204 ft.

E. R. Minshall No. 1 Banker, sec. 25, Blk. 146, T.&St.L. Sur. T.D. 3,005 ft.; P.B. to 2,974 ft.; swabbing 55 bbls. in 4 hrs.

Pinerock Oil Co. No. 1 White & Baker, SE cor. sec. 5, Blk. 207, T.C. Sur. Drlg. 900 ft.

Walter Abell No. 1 White & Baker, sec. 2, Blk. 179, T.C.R.R. Sur. Drlg. 1,712 ft.

S. Thompson No. 1 Elsinore Cattle Co., sec. 54, Blk. D, G.C.&S.F. Sur. T.D. 4,910 ft.; M.I. rotary.

Trans-Pecos Oil Co. No. 1 Gallagher, sec. 9-51-10, T.&P. Sur. Drlg. 1,426 ft.

Young No. 1 Perry. Fsg. 300 ft.

Presidio County

L. C. Brite No. 4 fee, C NW¼ sec. 113, Blk. 12, G.H.&S.A. Sur. No report.

A. H. Main No. 1 Greenlee, sec. 40, Blk. 347, 13 mi. NE of Marfa. No report.

Reagan County

Bahan & Rhodes No. 1 Kloh, sec. 37, Blk. 37, Twp. 5s, T. & P. Sur., NW cor. of county. Drlg. 3,370 ft.

K. E. Sherman et al No. 1 W. E. Friend, SW cor. sec. 3, Wm. Allen Sur. Spdg.

Reeves County

Grisham & Hunter No. 1 Montgomery, sec. 1, W. R. King Sur. S.D. 3,870 ft.

Runnels County

K Z Oil Co. No. 1 B. Fletcher, 114 ft. NW and 190 ft. from SW, E. C. Good Sur. Drk.

Price & Kramer No. 1 Giesecke, Blk. 227, Hughes Sur. S.D. 200 ft.

Stevens & Glover No. 1 Fowler, sec. 150, E.T.R.R. Sur., 2 mi. NE of Ballinger. Drlg. 222 ft.

Schleicher County

J. M. Cooper No. 2 B. Page, sec. 40, Blk. L, G.H.&S.A. Sur. Drlg. 118 ft.

Mangus Oil Co. No. 1 Judkins & Spencer, C SW¼ sec. 4, W. W. Russell, grantee. Elev. 2,209 ft.; T.D. 6,527 ft.; P.B. 5,912 ft.; S.D.

Scurry County

Bristow & Cantrell No. 1 Tomlinson, sec. 122, Blk. 97, H.&T.C. Sur. Drlg. 2,361 ft.

E. L. Goos No. 1 Henderson, sec. 148, Blk. 97, H.&T.C. Sur. Spudded.

Upton County

Amerada Pet. Corp. No. 5 Lane, sec. 32, Blk. 1, M.K.&T. Sur. T.D. 2,188 ft.; P.B. 2,186 ft.; shot; C.O.

Ward County

Magnolia Pet. Co. No. 1-55 Sealy, sec. 55, Blk. F, G.M.M.B.&A. Sur. R.U.S.T. 2,618 ft.

L. F. White et al No. 1 Rector-Monroe, E cor. sec. 3, Blk. 1, W.&N.W. Sur. Drlg. 3,982 ft.

Winkler County

Richardson No. 1-B Walton, sec. 20, Blk. 77, P.S.L. Sur. Drlg. 3,077 ft.

York & Harper et al No. 1 Gunter & Munson, sec. 7, Blk. C, G.M.M.B&A. Sur. Drlg. 4,530 ft.

Yoakum County

Bahan et al No. 1 Shook Est., sec. 420 Blk. D, John H. Gibson Sur. Drlg. 1,400 ft.

Magnolia Pet. Co. No. 1 Mrs. M. E. Taylor, sec. 201, Blk. D, John H. Gibson Sur. Drlg. 859 ft.

RANGER (CENTRAL TEXAS) DISTRICT

Brown County

J. L. McMurray Hrs. No. 1 Edington, 3 mi. S Cross Cut, R. G. Milliken Sur. A-618. Drlg. 825 ft.

Callahan County

A. R. Forster No. 1 C. B. Snyder, NW cor. NE¼ county, sec. 139, B.B.B.&C. Sur. Sand 1,070-75 ft.; U.R. 6-in.

Eastland County

J. T. Anderson No. 1 Crist, 8 mi. N of Rising Star, sec. 36, Lavaca Co. Sch. Lds. U.R. 12-in. to 735 ft. Drlg. 1,060 ft.

J. A. Bearman et al No. 1 Mrs. R. L. Poe, S edge Cisco, sec. 79, H.&T.C. Sur., Blk. 4. U.R. 10-in. 1,540 ft.

F. J. Estes No. 1 Gentry, A. Popejoy Sur. S.D. 3,000 ft.

Hoffman & Page No. 1 Dodd, 5 mi. S of Ranger, Subd. 11, William VanNorman Sur. Drlg. 3,210 ft.

States Oil Corp. No. 1 H. S. Schmick, 1 mi. NE Eastland, SE¼ sec. 1, H.&T.C. Sur., Blk. 4. S.D. 1,625 ft.

Jones County

Fain & McGaha Oil Corp. No. 1 Lewis, 5½ mi. NE Hawley, sec. 37, T.&P. Sur., Blk. 15. Sand 1,928-35, est. 25 bbls.; prep. to test.

Fain & McGaha Oil Corp. No. 1 J. H. Wheeler, 3 mi. NW Sandy Ridge pool, sec. 55, O.A.L. Sur. M.I.

Golden Pet. Co. No. 1 Wooten, SE cor. county, 330 ft. from S, sec. 4, B.A.L. Sur. Machine.

A. P. Kouri et al No. 1 Winkles, 2 mi. N Nugent, J. M. Polk Sur. A-495. Drlg. 790 ft.

Lewis Prod. Co. et al No. 2 Sayles, 240 ft. sec. 6, T.&P. Sur., Blk. 20, 1 mi. S Sayles pool. Sand 1,962-67; P.O.P.

M. R. Meade et al No. 1 M. Caton, 7 mi. W Luelders, 150 ft. from E sec. 4 OAL. Drk.

Peckham et al No. 1 Denton Co. Natl. Bank, NE cor. county, sec. 17, H.&T.C. Sur., Blk. 3. T.D. 1,172 ft.; fsg. tools.

Petroleum Producers Co. No. 1 H. C. Harvey, 3 mi. E Nugent, T.&P. Sur., Blk. 14. Sand 1,643-47 ft.; tstg.

Riddle et al No. 1 J. D. Freeman, 8 mi. SW Anson, sec. 6, T.&P. Sur., Blk. 17. S.D. 1,725 ft.

Palo Pinto County

Cole & Harris No. 1 Harris NW/c county, 880 ft. from N. 330 ft. from W. Dr. LaGarza Sur. Spud. and S.D. 4,000-ft. test.

D. H. & C. Drlg. Corp. No. 1 Davenport, 6 mi. SE Palo Pinto, L. F. Margaret Sur. A-309. T.D. 2,000 ft.

Paul Garrett No. 1 Mabry heirs, NE cor. county, sec. 2,572, T.E.&L. Sur. Skidded 25 ft. E.; drlg. 100 ft.

W. K. Gordon et al No. 2 Canty, 8 mi. W Palo Pinto, sec. 42, T.&P. Sur., Blk. 2. Top sd. 3,930 ft.; est. 250,000 ft. gas; set csg.

Henry Hobbs et al No. 1 Bessie Holt, 4 mi. S. Graford, sec. 1,783, T.E.&L. Sur. Drlg. 200 ft.

Earnest Lloyd et al No. 1 Bailey, 3 mi. NE Graford, sec. 2,003, T.E.&L. Sur. U.R. 900 ft.

Shackelford County

Groover & Rose et al No. 1 Nail, 10 mi. NW Cook pool, 220 ft. from N and W line, SE¼ sec. 153, E.T.R.R. Sur. Spdg.

Ungren & Frazier et al No. 1 Snyder, 3 mi. SW Sedwick, sec. 26, L.A.L. Sur. Drlg. 3,760 ft.; black L. 3,982-4,000 ft. show oil; tstg.

Stephens County

W. T. Garret et al No. 1 Echols, 6 mi. SE of Ivan, W½, sec. 10, Blk. 3, S.P.R. R. Sur. Sand 3,865-73 ft.; tested 16,750,000 ft. gas; S.D. 3,880 ft.

Mudge Oil Co. No. 1 S. H. Hill, 3 mi. SW Eliasville, sec. 1,122, T.E.&L. Sur. L. 3,210-42 ft.; prep. to shoot.

Tarrant County

E. E. Hoffpauir et al No. 2 W. H. Davis, 2 mi. S Arlington, H. Blackwell Sur. S.D.O. 2,140 ft.

Taylor County

Dunn & McAlister No. 1 Bowles, NE cor. county, SW¼ sec. 28, B.A.L. Sur. C.O. and tstg. 1,750 ft.

Fields, Finley & Cherry No. 1 Hinds, 1 mi. W. Tye, Blk. 5, Jose Gabo Sur. No. 128. Drlg. 1,010 ft.

Golden Pet. Co. No. 1 C. B. Braune, sec. 15, League 144, Guadalupe Co. School Lands Sur. M.I.R.

Wm. Hix & Co. No. 1 A. H. Spencer, sec. 413, A. McBerth Sur., 5 mi. E Tuscola. Loc. for 4,500-ft. test.

Hal Hughes et al No. 1 Manahan, 5 mi. S Abilene, sec. 14, L.A.L. Sur. T.D. 1,845 ft.; fsg.

Wise County

Latex Oil Co. No. 1 Smith, 3 mi. E Bridgeport, Jas. Couch Sur., Abst. 104. S.D. 2,165 ft.

NORTH TEXAS WILDCATS

Archer County

Cargo Oil Co. No. 1 Slopansky, sec. 64, Harris Sur. Drlg. 1,272 ft.

O. P. Darsey No. 1 J. T. Longley, sec. 1839, T.E.&L. Sur. Drlg. 100 ft.

Deep Oil Co. No. 1 Wilson No. 5, sec. 75, A.T.N.C.L. Drlg. 3,585 ft.

J. G. Steele No. 1 Andrews, R. Rainey Sur. A-354. Drlg. 970 ft.

Wilson & Ligon No. 1 Pearston, sec. 120, Harris Sur. Drlg. 2,590 ft.

Clay County

L. T. Burns No. 1 Sanzenbacker, L. N. Sparks Sur. A-401. Loc.

Foster Minerals Corp. No. 1 V. H. Yarbrough M. Lassiter Sur. A-288. Loc.

Walter H. Gant No. 3 C. M. Worsham, H. &T.C. Sur., Blk. 4. Drlg. 2,150 ft.

Green Mt. Oil Co. No. 1 Staggs, sec. 34, A.C.S.L. Sur. Drlg. 2,070 ft.

R. N. Hamilton No. 1 Fred Wines, sec. 4, H. Dixon Sur. A-106. S.D.O. 260 ft.

Cooke County

Denver P. & R. Co. No. 1 Solomon, W. G. Hunt Sur. A-493. Loc.

Geo. L. Pace No. 1 J. A. Rohmer, Geo. Ivy Sur. A-516. Loc.

Peterson et al No. 1 J. M. Floyd, Chas. DeMorse Sur. A-305. S.D.O. 870 ft.

Sparks & Russell No. 1 C. F. Bundy, P. P. Cary Sur. A-1239. Spud. and S.D.

Denton County

Bolivar Drlg. Co. No. 1 Bentley, J. Yoakum Sur. A-1443. Core S.S.O. 1,698-1,705 ft.; will test.

Bolivar Drlg. Co. No. 1 J. P. Knox, R. Howard Sur. A-542. Gas sd. 1,950-55 ft.; S.D.O.

H. Culver No. 1 Waide, J. Chisum Sur. A-278. Drlg. 1,315 ft.

J. C. Foster No. 1 Jeffcoat, J. West Sur. Drlg. 3,008 ft.

A. A. Lander, Inc., No. 1 Forrester, Jean Baroux Sur. A-45. 6⅝-in. csg. 1,640 ft.; O.S. 1,648-52 ft.; tstg. est. 20 to 25 bbls.

Oil Finance No. 1 J. S. Gambill, S.D.O. 2,030 ft.

Ruwaldt & Martin No. 1 Joe S. Gambill, J. B. January Sur. A-658. Drlg. 1,511 ft.

Grayson County

F. Gailbreath et al No. 1 Singletary, Chas. Quillian Sur. A-989. P.B. 3,862-75 ft.; pmpd. 30 bbls. oil and trace wtr.; C.O.

North Texas Oil Co. No. 1 A. M. Smith, R. M. Williamson Sur. A-1300. S.D.O. 370 ft.

Olson et al No. 1 D. R. Uitger, P. P. Cady Sur. A-301. Fsg. 1,800 ft.; D.S. at 5,751 ft.

Pete Shanor No. 1 Blair, H.L. 3,548-55 ft.; show heavy oil; treating with acid; swbg.; S.D.O.

Hardeman County

Locke & Durham No. 1 A. Schoppa, sec. 57, H.&T.C. Sur., Blk. 16. Drlg. 700 ft.

Jack County

Big "6" Oil Co. No. 1 J. S. Callis, S.P.R.R. Sur. A-575. Drlg. 1,705 ft.

Carpenter Oil Corp. No. 1 Johnson, R. Parker Sur. A-461. R.U.S.

Danciger O. & R. Co. No. 1 Kinder, B.S.& F. Sur. A-83. Drlg. 3,050 ft.

H. M. Leidecker No. 1 J. W. Padgett, E. Allbritton Sur. A-1890. Drlg. 600 ft.

Tebay & Leberman No. 1 S. E. and E. W. Rankin, J. P. Thomason Sur. Loc.

Tillman et al No. 1 Jones, J. Helmstutter Sur. No. A-1269. Drk.

R. A. Westbrook No. 1 Worthington-Knox, B.B.B.&C. Sur. A-185. Pits.

Montague County

Denver P. & R. Co. No. 1 Copeland, Blk. 162, Kembro Sur. Drlg. 4,480 ft.

Gibson-Jennings No. 1 J. G. Howard, Blk. 91, K.C.S.L. Sur. Drk.

Moss Holmes No. 1 I. N. Monroe, F. Secrest Sur. A-665. Loc.

Montague Oil Co., Inc., No. 1 W. J. Bell, sec. 2,882, T.E.&L. Sur. Drlg. 4,210 ft.

Selby O. & G. Co. No. 1 J. M. Batts, M. B. Tatum Sur. A-740. Loc.

Ventex Investments, Ltd., No. 1 S. E. Bell, sec. 11, M.E.P.&P. Sur. Drlg. 2,378 ft.

Wichita County

Christie et al No. 1 Vanmeter, Blk. 35, K.W.V.F.L. Sur. Fsg. 2,060 ft.
Leo Oil Co. No. 1 Fonville, sec. 323, Waggoner Co. Sur. R.U. and S.D.
Petroleum Prod. Co. No. 73 First National Co., Blk. 29, K.W.V.F.L. Sur. 7-in. csg. cmt. 3,671 ft.; S.L. 3,720-43 ft.; treated acid; est. 150 B.P.D. at 3,800 ft.

Wilbarger County

Consolidated Oil Co. No. 1 Waggoner-BB, S.P.R.R. Sur. A-535. Spdg.
Davis Oil Corp. No. 1 Waggoner-A, sec. 36, H.&T.C. Sur., Blk. 2. O.W.D.D.; fsg.; T.D. 3,197 ft.
Gibson & Jennings No. 1 Waggoner, sec. 109, H.&T.C. Cur., Blk. 14. Drlg. 1,520 ft.; S.S.O. 1,619-20 ft.; tstg.
F. A. Lain No. 1 J. Coffee, sec. 44, H.&T.C. Sur. O.W.D.D.; drk.
Geo. L. Pace No. 1 Waggoner, sec. 45, H. &T.C. Sur., Blk. 4. Drlg. 275 ft.
L. Webb No. 1 Waggoner, sec. 49, H.&.T. C. Sur., Blk 2. L.S.O. 2,406-28 ft.; tested wtr.; S.D.O.; recmtg. csg.

Wise County

Latex Oil Co. No. 1 C. R. Smith, J. Couch Sur. A-104. Drlg. 2,050 ft.
Texas-Canadian Dev. Co. No. 1 T. N. Maxwell, I. Epps Sur. A-267. S.D.O. 4,025 ft.

Young County

Ambrose & Meyers No. 1 Brogden, T. C. Wadley Sur. A-2309. Loc.
F. W. Bennett No. 1 T. E. Mathews, I. Hughson Sur. A-2162. Spdg.
Collins & Fitzwater No. 1 J. G. Castleman, sec. 72, T.E.&L. Sur. Drlg. 300 ft.
J. E. Kadane No. 1 B. F. Manley, T.E.&L. Sur. 2128. Drk.
D. P. Kenyon No. 1 J. W. Daws, T.E.&L. Sur. 752. Drlg. 500 ft.
C. A. Lupton et al No. 1 Hall, B. R. Aiken Sur. A-2241. Drlg. 2,200 ft.
Pitzer & West & Lion No. 1 Mrs. F. Wray, T.E.&L. Sur. 3411. Drlg. 1,120 ft.
Pitzer & West No. 1 J. C. Nolen, T.E.&L. Sur. 606. Drlg. 2,772 ft.
T. G. Shaw Oil Corp. No. 1 J. L. McLaren, sec. 6, B.B.&C. Sur. 9-29. Spdg.
A. T. Strong No. 1 M. K. Graham, T.E.&L. Sur. 3410. Drlg. 2,000 ft.
C. V. Welch No. 1 Street, M. E. Criswell Sur. A-1772. Drlg. 3,380 ft.
Yorktex Pet. Co. No. 1 W. E. Steele, I.R.R. Sur. A-156. Fishing 1,600 ft.

Canadian Fields

(Continued from Page 101)

below 100 feet and preparing to set surface casing.

Home Oil Co. Operations

Home Oil Co. of Vancouver, British Columbia, which pioneered the South Turner Valley field some 10 years ago, will this spring start a drilling campaign in Alberta. The program will include a test with rotary tools on the west flank of North Turner Valley. A second test will be started with standard outfit in the Alberta border area between Del Bonita and the Red Coulee field. The location will be just north of the Montana boundary and about 6 miles west of the Red Coulee producers.

A systematic program of diamond drill tests will be started on the Brazeau structure in the foothills considerably north of Calgary. The area was geologized last summer by Dr. J. O. G. Sanderson of Calgary, who will have charge of the exploration work for the Home Oil Co. in Alberta.

High River-Aldersyde

On the Cayley structure in the High River area, east of Turner Valley, Area Development Corp. No. 1, NW quarter section 24-18-1w5, is below 8,812 feet, more than 56 feet in the Madison lime.

On the New Valley structure northeast of Turner Valley, McLeod Oil Co. No. 1, LSD 4, section 6-21-2w5, is in the Lower Benton formation below 7,250 feet, with considerable crude; and will probably be completed in the Dakotas around 7,400 feet.

Tests in the Foothills

In the Forest Reserve area 65 miles west of Olds, Hunter Valley Oil Co. No. 1 McLaren, LSD 12, section 13-31-10w5, is shut down at 7,250 feet waiting for fuel oil. It got a considerable gas flow at 7,231 feet.

On the Kootenay dome west of Calgary, Roxana Petroleum No. 1, section 8-24-7w5, is below 2,406 feet, about 1,459 feet below the top of the Madison limestone, and is believed to be entering the Banff shales. It is geologically the deepest well now drilling in Alberta. Production is expected in the underlying Devonian limestone.

On the Birch Ridge structure, Elbow Oils No. 1, LSD 11, section 35-22-5w5, is at 5,005 feet with considerable gas and believed to be in the brown sand of the Dalhousie formation.

On the Highwood-Sinclair structure west of Turner Valley, South End Petroleums No. 1, LSD 6, section 36-18-3w5, is rigging diamond drill outfit to complete the old Imperial-Highwood well from 4,525 feet.

On the Mill Creek structure west of Pincher Creek, Weymarn Petroleums No. 2, LSD 5, section 7-6-1w5, is moving in equipment to test production. The well bottoms at 5,960 feet and casing will be set around 4,500 feet where the first large oil and gas shows were struck, and after cementing the plug will be drilled out with cable tools.

Border Fields

In the Taber field, southern Alberta, R. I. Clancey, of Toronto, president of Plains Petroleum Corp., Ltd., has announced a drilling program of eight wells for which contract has been completed between the company and the Lyons group of Ohio and Pennsylvania, and funds already provided to complete the program. Cellar has been dug for Plains Petroleum No. 2 in LSD 11, section 25-9-17w4, just south of No. 1 producer. The new well will be structurally higher. Equipment is now being moved in, and the test is expected to get the Clancey sand within 60 days after spudding. No. 1 discovery well is shipping crude to Calgary. The crude is between 29 and 30 gravity with paraffin base, and is worth $1.25 to $1.35 a barrel. No. 1 will be left on production till No. 2 is completed to the same sand, when the water condition in No. 1 will be dealt with. It may also be deepened to the basal Ellis sand where main production is expected.

In addition to the Plains Petroleum program, which will be spread over the year, a number of other companies are reported planning to test the field this spring.

Ontario Operations

In Chatham Township, Kent County, Ontario, Union Gas Co. No. 9, Lot 9, Concession 11, is below 1,375 feet. Union No. 10, Lot 7, Concession 12, is rigging.

In the Tilbury field, Kent County, MacNamara Construction Co. No. 2, Elmer Cox farm, Lot 5, Concession 10, Tilbury East Township, finished in the Tilbury sand around 1,400 feet with 10 bbls. a day and about 50,000 feet of gas. It will be shot with 100 quarts.

In the Brownsville field, Armand Smith No. 5, Henry Downing farm, Lot 5, Concession 10, Bayham Township, Elgin County, finished around 935 feet with 250,000 feet a day. Brownsville-Nelson Gas Syndicate No. 2, Nelson farm, Lot 6, Concession 10, has set 8¼-inch casing and is drilling in. W. C. Patterson & Co. No. 4, Lot 5, Concession 10, is below 500 feet.

In the Dawn field, Lambton County, Union Gas Co. No. 91, Lot 11, Concession 8, Dawn Township, is below 450 feet.

In Essex County, a Toronto Syndicate is leasing acreage in the vicinity of Comber and Stony Point and will drill a well this spring. Some 30 years ago there was a small oil field near Comber, and later production was secured in a number of shallow wells farther west, at Belle River.

CALIFORNIA OIL FIELD DEVELOPMENTS

Sixty-three wells were completed during the month with an initial daily production of 22,157 bbls., compared with 77 wells completed during January with an initial production of 43,597 bbls.

	New rigs up	Active drilling	Producers completed	Daily initial output	Active producing	Abandoned: Drillers	Abandoned: Producers
Group 1:							
Belridge—North	3	4	...	.....	41	...	...
Belridge—South	...	...	...	.....	161	...	...
Coalinga	1	1	1	10	890	...	9
Edison	...	1	1	50	87	1	...
Elk Hills	...	...	...	.....	154	...	...
Fruitvale	6	9	1	190	131	3	...
Greeley	1	5	...	.....	1	...	...
Kern River	8	13	11	1,673	1,314	...	1
Kettleman Middle Dome	...	1	...	.....	3	1	...
Kettleman North Dome	...	11	3	3,117	142	...	...
Lost Hills	1	1	2	337	285	...	...
McKittrick	1	1	1	120	126	...	...
Midway-Sunset	16	26	14	4,303	2,362	...	...
Mountain View	1	9	3	476	174	3	...
Mount Poso	2	4	1	60	246	4	...
Round Mountain	3	2	...	.....	117	1	...
Ten Section	3	3	1	2,724	3	1	...
Wheeler Ridge	...	...	...	.....	26	...	...
Group 2:							
Capitan	2	1	...	.....	27	...	...
Elwood	...	1	...	.....	79	...	...
Rincon	...	1	...	.....	31	...	...
San Miguelito	2	4	...	.....	10	...	...
Santa Barbara	...	...	...	.....	52	...	...
Santa Maria	6	10	1	701	202	...	...
Summerland	...	...	...	.....	19	...	...
Ventura Avenue	2	7	...	.....	246	...	...
Ventura-Newhall	1	18	...	.....	563	...	...
Watsonville	...	...	...	.....	7	...	...
Group 3:							
Brea-Olinda	...	...	...	.....	363	...	...
Coyote—East	1	2	2	490	76	...	...
Coyote—West	...	1	...	.....	46	...	...
Dominguez	1	6	1	1,015	127	...	...
El Segundo	1	10	2	1,195	6	...	...
Huntington Beach	1	5	3	215	556	...	3
Inglewood	...	1	...	.....	202	...	...
Lawndale	...	...	...	.....	6	...	...
Long Beach	1	2	...	.....	1,243	...	3
Los Angeles-Salt Lake	...	...	...	.....	122	...	...
Montebello	...	3	1	90	197	...	...
Newport	...	1	...	.....	...	...	...
Playa Del Rey	1	1	...	.....	213	...	...
Potrero	...	...	...	.....	10	...	...
Richfield	1	7	2	170	263	...	1
Rosecrans	...	...	...	.....	75	...	...
Santa Fe Springs	...	1	1	467	643	...	5
Seal Beach	...	...	...	.....	108	...	...
Torrance	3	7	1	150	526	...	...
Whittier	...	1	...	.....	156	...	...
Wilmington	21	25	8	4,604	25	...	...
Miscellaneous drilling	10	57	...	.....	.....	7	...
Group 4—gas fields:							
Buena Vista Lake	...	...	...	.....	4	...	...
Buttonwillow	...	...	...	.....	17	...	...
Chowchilla	...	...	...	.....	.....	...	...
Delano	...	...	...	.....	.....	...	...
Dudley Ridge	...	...	...	.....	.....	...	...
Goleta	...	...	...	.....	.....	...	...
McDonald Island	...	...	1	gas	.....	...	...
Rio Vista	1	1	1	gas	4	...	...
Semi-Tropic	...	...	...	.....	.....	...	...
Tracy	...	...	...	.....	6	...	...
Total February	101	264	63	22,157	12,493	21	22
Total January	124	231	77	43,597	12,384	28	27
Decrease (*increase)	23	*33	14	21,440	*109	7	5

California Fields

(Continued from Page 100)

pleted No. 8 Coyle pumping 191 bbls. of 20.3 gravity oil per day from 3,413 feet. The hole was finished with a 6⅝-inch liner including 406 feet of perforated.

Kettleman Hills

Kettleman North Dome Association in the Kettleman North Dome field completed No. 85-32-J in section 32-31-17, flowing 1,730 bbls. of clean 35.5 gravity oil and 660,000 feet of gas per day from 8,500 feet.

In the extreme western end of the Lost Hills field the Texas Co. completed No. 2 Theta in section 11-26-20, a 40-bbl. well producing 14.5 gravity oil, cutting 40 per cent, from 1,147 feet. In the Rio Vista gas field of Solano County Amerada Petroleum Co. completed No. 2 Drouin at 4,463 feet but it was not given a production test.

In the Santa Maria field Union Oil Co. has recompleted No. 12 Squires in section 26-9-34, pumping 373 bbls. of relatively clean 24.3 gravity oil per day from 4,037 feet. The hole was finished with a 4½-inch liner carrying 416 feet of perforated. In the Montebello field of Los Angeles Basin Richfield Oil Corp. recompleted No. 1 Pasadena after cleaning out the hole to bottom, 5,910 feet, and it was returned to production flowing 340 bbls. of 35.4 gravity oil cutting 20 per cent. Italo Petroleum Co. No. 1 Yunker in the Long Beach field was returned to production pumping 320 bbls. of 23.5 gravity oil cutting 18 per cent daily from 6,616 feet.

Central West Fields

(Continued from Page 102)

Mayhugh had Keener sand at 1,015-21 feet and was abandoned when the hole filled with water. In section 14, Rutland Township, Barton & Utsinger abandoned the test on the Sherman Buskirk property. This test was completed below the Keener sand at 820-25 feet, where the hole filled with water.

In the same county, section 29, Salisbury Township, Powell & Co. are moving a machine on location for a test on the P. C. Powell property. In section 11, Letart Township, C. W. Hobeck & Co. have abandoned the test on the Higginbotham lease. This test was completed in the Berea sand at 1,919-30 feet and made a small amount of oil and a large amount of water.

KENTUCKY FIELD

In Ohio County, Kentucky, in the Dundee pool, C. A. Shacklett & Co. completed No. 2 Ronnie Graham 7 acres as a 50-bbl. producer. The same operators are rigging up No. 4 and are drilling No. 3 on this same lease. In the same pool, Henry Scholl No. 5 Alex Whitehouse has been abandoned as a failure and the rig has been moved to another location on this lease for No. 6.

MARKET RECORD, ACTIVE OIL STOCKS

Compiled by Carl H. Pforzheimer & Co., 25 Broad Street, New York City, Member New York Stock Exchange and New York Curb Exchange

New York Stock Exchange

1937 High	1937 Low	Week ended April 17 Sales	Week ended April 17 High	Week ended April 17 Low	Week ended April 17 Close	Stocks—	Total shares outstanding	Par value	Latest dividend	Payable or last paid	Dividends paid in 1936	1936 High	1936 Low	1935 High	1935 Low
114⅞	101	1,900	106½	103¾	105¾	Amerada Corp.	788,675	N.P.	50cQ	1-30-37	$2.00	125½	75	80	48½
37	30⅛	15,300	34¾	32½	33½	Atlantic Refining	2,664,904	$25	25cQ	3-15-37	1.25	35⅛	26⅝	28	20½
43⅜	35⅞	10,500	39⅜	37⅛	37½	Barber Co.	387,149	$10	50c	12-10-36	.50	38½	21	22½	11¾
35¼	26⅛	28,600	33½	30	31⅝	Barnsdall Oil Co.	2,131,090	$5	25cQ	5-1-37	.80	28¼	14⅛	14¾	5⅞
20⅞	14⅜	44,300	15¾	14⅜	14⅝	Columbia Gas & Elec.	11,610,036	N.P.	20c	11-16-36	.40	23⅜	14	15¾	3⅜
17⅜	15⅝	69,900	17¾	16⅝	16¾	Consolidated Oil Corp.	13,983,287	N.P.	20cQ	5-15-37	.80	17¼	11½	12¼	6½
47½	40¼	42,300	47⅛	44⅜	46⅞	Continental Oil of Delaware	4,682,671	$5	25cQ	3-29-37	1.50	44⅞	28⅛	35	15⅛
17⅝	12½	22,900	15¼	13⅝	14¼	Houston Oil (new)	1,098,618	$25	....	10-17-30	....	13⅞	6⅜	7	1½
35⅜	29¼	11,000	34⅛	31⅝	32	Mid-Continent Petroleum	1,843,872	$10	75cSA	12-1-36	1.15	30⅞	17¼	20½	9½
34	26⅞	1,600	32½	31	31⅝	Mission Corporation	1,399,345	N.P.	....	.....	.45	29⅞	16¾	17¾	10⅜
100½	62	8,900	100½	93	98¾	National Supply of Delaware	382,591	$25	....	5-15-31	....	75½	19⅞	20⅞	9
22⅞	17⅛	62,500	22⅞	21	21¾	Ohio Oil Co.	6,563,377	N.P.	35cSA	12-15-36	.60	18	12⅛	14¼	9¼
29¾	22¼	3,000	28⅜	27½	27½	Pacific Western Oil	1,000,000	N.P.	65c	12-18-36	.65	23½	11¾	14	6¾
4½	2⅜	11,100	4⅛	3	3¾	Panhandle P. & R.	198,770	N.P.	....	.....	....	4¼	1⅜	1⅞	½
59¼	49½	19,400	58½	55⅝	57¼	Phillips Petroleum	4,152,836	N.P.	50cQ	3-1-37	2.50	52⅜	38⅛	40	13¾
28⅜	24¼	12,600	28½	26⅞	28⅛	Plymouth Oil Co.	1,050,000	$5	35cQ†	3-31-37	.90	27¾	11⅞	13	6½
24⅜	19½	59,900	22¼	20	21⅛	Pure Oil Co.	3,038,370	N.P.	....	9-1-30	....	24⅞	16	17	5⅞
54⅛	40¼	19,500	52⅝	48	49¼	Seaboard Oil of Delaware	1,244,283	N.P.	25cQ	3-15-37	1.00	44	30½	36⅞	20¾
34¾	26⅞	9,200	32⅝	30¼	31½	Shell Union Oil	13,070,625	N.P.	25c	12-15-36	.25	28¼	14¾	16½	5½
105⅜	102	1,400	104½	103	103¾	Shell Union Oil 5½% pfd.	400,000	$100	26⅛c	12-15-36	28.87½	127½	102	111	63⅛
4⅛	3⅛	4,300	4⅛	4	4⅛	Simms Petroleum	461,698	$10	50c liq.	1-9-37	2.25 liq.	6¾	3½	18¾	4¾
60	42	7,000	60	56½	57½	Skelly Oil	1,008,514	$15	....	12-15-30	....	47⅜	19½	20½	6½
19¾	16¼	141,900	20	18⅜	19½	Socony-Vacuum	31,151,075	$15	25cSA	3-15-37	.70	17½	12½	15¾	10⅝
50	43¼	28,600	47	45½	46⅞	Standard Oil of California	13,014,754	N.P.	30cQ†	3-15-37	1.20	47⅝	35	41⅛	27¾
50	44⅜	13,200	47⅞	45¾	46⅞	Standard Oil (Indiana)	15,215,677	$25	40cQ†	3-15-37	2.40	48½	32¾	33⅜	23
32	31	No sales	..	..	..	Standard Oil of Kansas	200,000	$10	$1	12-26-36	1.00	31	25	32	20
76	67¾	33,400	71⅜	68½	68⅞	Standard Oil of New Jersey	25,856,081	$25	$1.25SA†	12-15-36	2.00	70⅜	51⅛	52⅜	35¾
77½	68	600	71¾	71½	71½	Sun Oil	1,733,013	N.P.	25cQ	3-15-37	$1 & 6% Sk.	91	70	77	60½
63⅞	50⅜	101,600	63⅞	58⅝	62⅝	Texas Corp.	9,340,069	$25	50cQ	4-1-37	1.50	55¼	28⅞	30¼	16½
9⅝	7⅞	20,000	9⅜	8¾	8¾	Texas Gulf Producing Co.	888,116	N.P.	5c	12-15-36	.05	8⅞	4⅜	4¾	2½
16⅝	13⅛	19,400	16¼	15⅜	15⅜	Texas Pacific Coal & Oil	880,703	$10	10c	3-1-37	.25	15¼	7½	9¼	3¼
21⅝	18⅜	30,300	20	18¾	19¼	Tide Water Associated	5,642,342	N.P.	15cQ	3-1-37	.70	21¾	14¾	15⅞	7⅝
28¼	24⅛	19,400	27⅛	25⅞	26⅜	Union Oil of California	4,666,270	$25	30cQ	5-10-37	1.00	28½	20¾	24	14¾
31½	26⅝	2,400	28⅞	28	28½	Union Tank Car Co.	1,200,000	N.P.	40cQ	3-1-37	1.20	31⅝	22⅝	26½	20⅞
6¼	4¼	13,300	5⅞	5¼	5½	Wilcox Oil & Gas	424,839	$5	....	5-10-28	....	5¼	2¾	3⅛	1

*Ex-dividend. †Includes extras.

New York Curb Exchange

1937 High	1937 Low	Week ended April 17 Sales	Week ended April 17 High	Week ended April 17 Low	Week ended April 17 Close	Stocks—	Total shares outstanding	Par value	Latest dividend	Payable or last paid	Dividends paid in 1936	1936 High	1936 Low	1935 High	1935 Low
21⅜	16	9,800	21⅛	17¾	19	Bridgeport Machine Co.	260,000	N.P.	$1	12-21-36	$1.00	21	13¼	14⅛	3¾
51½	46	150	50	50	50	Buckeye Pipe Line Co.	200,000	$50	$1Q	6-15-37	3.25	50	39¾	42½	30½
2¾	1⅞	9,700	2⅜	1⅞	2¼	Carib Syndicate	799,020	25c	....	.....	....	4⅞	1⅞	4¼	1⅝
121¾	110¼	350	122¼	119	122⅛	Chesebrough Mfg. Co.	120,000	$25	$1.50Q†	3-29-37	7.00	124¾	105	157	115
5⅜	4	35,100	4⅛	3⅞	3⅞	Cities Service	37,804,394	N.P.	....	6-1-32	....	7⅜	3	3¼	⅝
4⅝	2¼	3,300	2⅜	2⅛	2⅜	Cosden Oil	399,687	$1	....	.....	....	4½	1½	1½	¼
38	28½	13,700	33⅜	30⅛	33	Creole Petroleum	6,974,356	$5	25cSA	12-15-36	.50	39	19⅞	23¾	10
18⅝	15⅝	1,700	17⅛	16¼	17⅛	Darby Petroleum	351,390	$5	25cSA	1-15-37	.50	18⅛	9	8⅞	4
8¼	5¼	30,900	8¼	7	7¾	Derby Oil & Refining	263,162	N.P.	....	.....	....	6¾	1⅞	2	⅝
47½	37	No sales	..	..	..	Eureka Pipe Line	50,000	$50	$1Q	5-1-37	4.00	47½	38½	38	33¼
63½	53¾	13,700	59⅞	57¼	59½	Gulf Oil Corp.	9,076,202	$25	25cQ	4-1-37	1.50, 100% Stk.	59	36	74¾	50¼
87	77½	4,900	84	81	81¾	Humble Oil & Refining	8,923,935	N.P.	37½cQ	4-1-37	1.50	80	57	64	44
24¼	21	4,600	23	22	22	Imperial Oil of Canada	26,919,871	N.P.	62½cSA†‡	12-1-36	1.25	24½	19¾	22½	15⅝
15	7¾	200	13¾	13½	13½	Indiana Pipe Line	300,000	$10	30cSA	5-15-37	.80	9¾	5½	6⅛	3⅝
39½	33¾	3,200	36⅞	36	36	International Petroleum	14,247,088	N.P.	$1.25†‡	12-1-36	2.50	39⅝	32⅝	39¾	28
15¼	12	15,000	13¾	12	12⅞	Louisiana Land & Exp.	3,000,000	N.P.	10cQ	3-15-37	.50	15⅜	9⅞	11⅜	4⅜
26¾	16⅛	7,500	24¾	23⅞	24	Lion Oil Refining	270,000	N.P.	25cQ	12-26-36	.75	17¾	7⅝	8⅛	3½
14¼	10⅞	2,700	11	10⅝	10¾	Lone Star Gas	5,382,723	N.P.	20c	4-20-37	.60	14¼	9⅞	10⅞	4½
14⅝	11⅝	700	12⅛	11¾	12	Midwest Oil Co.	998,444	$10	57c	12-15-36	....	..	..	..	..
7⅞	6	1,100	6¾	6⅝	6¾	Mountain Producers	1,682,182	$10	30cSA	12-21-36	.60	8⅜	5	5¾	4⅛
19½	15⅝	10,700	16¾	15⅝	16¼	National Fuel Gas	3,810,183	N.P.	25cQ	1-15-37	1.00	23	17⅜	20	11¾
11⅞	10	1,100	10⅝	10⅜	10⅜	National Transit	509,000	$12.50	35cSA	12-15-36	.75	15¾	9¼	10⅝	6¾
6⅛	4¾	600	6⅛	5⅝	6⅛	New Bradford Oil	1,445,202	$5	15cSA	4-15-37	.10	4⅝	2⅞	3¼	2
5	3	1,400	3¼	3	3	New Mexico and Arizona	1,000,000	$1	1c	12-1-36	.01	6⅝	1⅝	2½	1
5⅜	4½	No sales	..	..	..	New York Transit	100,000	$5	15cSA	10-15-36	.35	6¼	4¼	4⅞	3
10¾	7½	1,100	10¾	10½	10¾	Northern Pipe Line	120,000	$10	35c	1-2-37	.40	9¾	4⅞	8	5¼
9⅝	5½	17,100	7	6⅛	6½	Pantepec Oil	1,608,700	N.P.	....	.....	....	10⅛	3¼	4⅜	1¼
13¾	7⅝	3,300	8⅝	8	8	Root Petroleum Co.	336,045	$1	25c	11-2-36	.50	19¼	4½	5	1½
6½	4	200	5	5	5	Ryan Consolidated	296,931	N.P.	....	.....	....	4¾	1⅞	2½	⅝
48	42	600	43½	42	43½	South Penn Oil	1,200,000	$25	60cQ†	3-29-37	2.60	44	32½	34½	21⅝
7¼	5	No sales	..	..	..	Southern Pipe Line	100,000	$10	20cSA	3-1-37	.25	7⅞	3¼	5	3⅞
42	32½	50	32½	32½	32½	South West Penna. Pipe Lines	35,000	$50	50cQ	4-1-37	13.00	60	44	56	44¼
20¾	19⅛	3,100	20⅛	19¾	20	Standard Oil of Kentucky	2,604,790	$10	25cQ	3-15-37	1.35	23⅜	17⅛	24	18
13¾	11½	200	13⅛	13	13	Standard Oil of Nebraska	188,403	$25	25c	3-29-37	.25	14⅝	11	12	7¾
45	33¼	1,100	41¾	40	41½	Standard Oil of Ohio	753,740	$25	25cQ	3-15-37	2.00	40	21¾	23⅝	11½
4⅞	4	8,900	4¾	4½	4¾	Sunray Oil	1,910,119	$1	5c	4-26-37	.10	5	2⅝	2⅞	⅞
7⅜	6⅛	600	6½	6¼	6¼	Texon Oil & Land	336,028	$2	15cQ	3-31-37	.60	9¾	5⅜	6⅞	5

*Ex-dividend. †Includes extras. ‡Payable in Canadian funds.

Note—In comparing highs and lows for the several years in the two tables, it will be necessary to take into consideration cases where there have been stock split-ups.

PERSONAL

BRUCE BARKIS, manager of field operations for Lane-Wells Company, was formerly general field superintendent for Rio Grande Oil Company and more recently assistant production manager of Richfield Oil Company. Mr. Barkis joins the Lane-Wells staff to provide the industry with advisory service based upon his years of practical and technical experience and to coordinate the Lane-Wells services with the changing problems of the industry. Mr. Barkis will make headquarters at the general offices of the company in Los Angeles, Calif.

H. T. WYATT, formerly chief engineer of Shell Oil Company in the Los Angeles, Calif., office, has been appointed division manager of the San Joaquin division which has been formed by combining the Oilfields division and the Bakersfield division. W. L. BAGBY formerly superintendent of the Ventura division has been appointed division manager of the Coastal division which includes Shell's holdings in the Ventura Avenue, Capitan and Santa Maria fields. F. R. SCHMIEDER, formerly production engineer in the Los Angeles office, has been appointed division manager of all fields in the Los Angeles Basin and will maintain headquarters at Long Beach, Calif.

CLAUDE V. BARROWS, oil editor, Daily Oklahoman, was a Tulsa visitor last week.

JOHN I. SHERIDAN, assistant traffic manager for Union Oil Company at San Francisco, Calif., recently rounded out 25 years of service with the company. JOHN R. HEARLE, of Los Angeles, Calif., auditor of taxes, completed 25 years with the company and then retired. The new 20-year men include A. F. MUELLERWEISS, G. B. DELEISSEGUES, J. B. GALLAGHER, C. A. BLUM, R. BROOKS, L. L. SWEET, E. P. TALLANT, C. K. N. HOWARD and B. H. KATT.

LINN M. FARISH is leaving Ardmore, Okla., where he has been district geologist for the Sinclair Prairie Oil Company for the past two years. He is to be connected with the exploration program of the Seaboard Oil Company in Persia and Afghanistan. Before going with Sinclair Prairie he was engaged in exploration work for the Seaboard in the Province of Quebec, Canada, and in eastern Venezuela. Previous to that he spent six years in the foreign department of H. L. Doherty & Company on Prince Edward Island, Alberta, and Quebec as well as in Mexico and Germany.

A. G. BAALIM of Sunshine Oils, Ltd., has returned to Lethbridge, Alberta, from a business trip to Vancouver, British Columbia.

L. L. FOLEY, consulting petroleum engineer and geologist, Tulsa, was in Oklahoma City, Okla., most of last week on professional work.

S. F. SHAW, consulting petroleum engineer, San Antonio, Tex., and Oklahoma City, Okla., is on a professional trip to Turner Valley field, Alberta, Canada.

J. S. WHEELES, JR., independent operator in Southwest Texas, has opened offices in San Antonio, Tex., in connection with Trinity Drillers, Inc., and R. H. FELTNER.

W. P. LAUGHTER, deputy supervisor for the Texas Railroad Commission in District 2 with headquarters in Refugio, Tex., has been placed in charge of District 1 which has offices in San Antonio, Tex. He will direct the work of both districts from Refugio.

R. R. HAWKINS, district engineer and production superintendent of the Oklahoma-Kansas-Kentucky division of the Texas Company, Tulsa, has resigned to become consulting engineer specializing in secondary recovery methods. He will continue to make his home in Tulsa.

C. B. SIMON was reelected president of the Marathon Club of the Ohio Oil Company, Tulsa, for the ensuing year at the annual meeting held last week. The other new officers are W. J. WILSON, vice president; J. W. STINSON, treasurer; KATHRYN HOPPEL, secretary and the trustees are EDNA LAWSON, F. W. WEISS, IVAN COLLIER and DAVE GILMORE.

Do You Remember?

From The Oil and Gas Journal Files

25 YEARS AGO

Within 60 days there will not be a coal-burning locomotive on the mountain division of Canadian Pacific Railroad.

J. E. (Jack) Crosbie, of Tulsa, is regarded as the most prominent individual oil man in the Mid-Continent field.

Charles Quinlan, of Carlyle, Ill., and Miss Carmeleta Chestnut, daughter of Mr. and Mrs. Thomas Chestnut, of Robinson, Ill., were married on April 17 at Robinson. Mr. Quinlan is an employe of the Ohio Oil Company. They will reside in Carlyle.

William H. Mandeville, 71, one of the incorporators of the Ohio Oil Company in 1887, dies in Olean, N. Y. The company was later made a part of the Standard Oil Company of New Jersey.

As soon as the recently opened Cushing field proves important enough, the Prairie Pipe Line will lay a line to it from Cleveland, Okla., about 22 miles distant.

20 YEARS AGO

George Porter, 73, formerly of Waugh & Porter, prominent Eastern field operators, dies in Pittsburgh, Pa. Since 1886 he had been in the employ of the Standard Oil Company and was a South Penn superintendent at the time of his death.

Mid-Continent oil companies are paying bonuses to employes to meet the increasing cost of living.

George R. Gibbons, believed to be the oldest living glycerine shooter, with a remarkable record of hair-breadth escapes, dies of illness in Bradford, Pa.

10 YEARS AGO

The Carter Oil Company is producing 91,000 barrels per day in the Seminole, Oklahoma, field.

An Oklahoma producer calls attention to the fact that while he sells his crude oil for 3 cents per gallon he has to pay 5 cents a gallon for drinking and cooking water.

Crude oil production has increased 150 per cent over World War times. Gasoline yield has increased 400 per cent.

TOM HILL, scout with the Sun Oil Company, has been transferred to Corpus Christi, Tex., to cover activity in Nueces and San Patricio counties.

DR. F. B. PLUMMER, professor of petroleum engineering, University of Texas, Austin, Tex., was guest speaker before Tulsa Geological Society on the evening of April 19. His subject was "Oil Reservoirs."

CHARLES C. BROWN, formerly member of the Oklahoma Tax Commission, is now acting as full time technical adviser to the Interstate Oil Compact Commission, with headquarters in Oklahoma City, Okla.

LYNN L. HARDEN, geologic scout for the Sinclair Prairie Oil Company in Corpus Christi, Tex., has been transferred to Eastland, Tex., and will be succeeded in Corpus Christi by ADRIAN HEATON of Carthage, Mo.

J. A. LAFORTUNE, vice president, Warren Petroleum Corporation, Tulsa, and family will return from a three weeks' visit on the European continent sailing from Paris, France, April 16 and expect to be at home April 25.

MARK L. TERRY, formerly petroleum engineer, the Texas Company, Tulsa, has been appointed district engineer and production superintendent of the Oklahoma-Kansas-Kentucky division succeeding R. R. HAWKINS, resigned.

D. F. DICKEY, title and chief clerk in the land office of the Texas Company, Tulsa, has been placed upon the retired list after continuous service with that company since September 1, 1918. C. A. PATTERSON, N. E. GLISSON and H. F. DUNN have been advanced in their office status as title clerks.

PARAGRAPHS

R. E. COLLOM, vice president in charge of California operations of Continental Oil Company, has been elected president of the Kettleman North Dome Association succeeding WILLIAM REINHARDT who resigned to take charge of the oil interests of the Union Pacific Railroad Company. C. J. SARGENT was appointed manager of field operations. Other officers elected at the annual meeting were A. L. WEIL, General Petroleum Corporation and C. P. WATSON, Seaboard Oil Corporation., vice presidents; C. E. SAMPSON, secretary-treasurer and W. B. THOMPSON, assistant secretary. Directors of the association for the coming year are R. L. MINKLER, General Petroleum Corporation; J. P. GASSER, Seaboard Oil Corporation; L. A. CRANSTON, Kettleman Oil Corporation; L. C. DECIUS, Tide Water Oil Co.; J. U. STAIR, Shell Oil Company, A. H. BELL, Continental Oil Company; R. E. COLLOM, Continental Oil Company; R. A. SPERRY, General Petroleum Corporation; A. L. WEIL, General Petroleum Corporation; N. A. ROUSSELOT, Seaboard Oil Corporation and C. P. WATSON, Seaboard Oil Corporation.

J. A. ELKINS, Houston, Tex., a member of the firm of Vinson, Elkins, Weems and Francis, has been elected a director of Pure Oil Company to succeed I. B. HUMPHREYS, resigned. Mr. Elkins has represented the company in the southwest in legal matters for a number of years. He is president and a director of the City National Bank of Houston.

WINSTON P. HENRY, president of the Putnam Oil Company, Houston, Tex., has been elected a member of the executive committee of the Independent Petroleum Association of America to fill a vacancy in the committee from South Texas. E. A. SHOWERS, president of Showers & Moncrief, Inc., has been elected vice president of the association for the Southeast Texas district.

H. C. DAVIDSON, formerly northern division sales promotion supervisor for Union Oil Company at Seattle, Wash., was recently appointed district sales manager, Portland, Ore., district. Mr. Davidson was first employed in a clerical position by Union Oil Company in Phoenix, Ariz., in 1918. Later he was transferred to El Centro and, as assistant cashier and subsequently as cashier, at El Centro, San Diego and Sacramento. In 1929, he took charge of sales promotion in the Sacramento district. In 1931, he was appointed sales supervisor of the Oakland district.

W. E. HOLMES of Vancouver, British Columbia, was in Calgary, Alberta, recently to investigate recent oil developments.

HAROLD DECKER district production superintendent for Skelly Oil Company at Houston, Tex., has resigned to become associated with the Seaboard Oil Corporation at Houston.

O. C. FIELD, of the O. C. Field Gasoline Corporation of California, left April 14 with his family for a two months' trip to England where they will attend the coronation of King George VI.

CHARLES VAN VLECK, Oklahoma City, Okla., field manager for the Independent Petroleum Association, was in Shreveport, La., last week arranging for the Louisiana district meeting of that association.

A. C. GALBRAITH, assistant vice president of the Union Oil Company, will be the main speaker at the meeting of the California Natural Gasoline Association scheduled for May 6, 1937. His subject will be "Industrial Relations."

W. W. BECK, general manager of Pennsylvania Refining Company, Butler, Pa., accompanied by MRS. BECK, returned to the United States April 7 aboard the Grace line's Santa Elena. The voyage from California touched Mexico, Guatemala, El Salvador, Panama, Colombia and Havana.

CHARLES F. ROESER of Fort Worth, Tex., president of the Independent Petroleum Association of America, and H. B. FELL, Ardmore, Okla., vice president of that association, addressed a group of Shreveport, La., operators on April 16, touching upon local and national problems pertaining to the industry.

From Tankcar-Rack Up

From helper on a tankcar-rack, promotions came with satisfactory regularity for J. L. Latimer, now assistant manager of the Magnolia Pipe Line Company. The reason seems to have been that he slighted no job he had and so was always ready for something better.

J. L. LATIMER

While still a boy Mr. Latimer left his birthplace, Olean, N. Y., where there was a lot of oil, and migrated to Texas, where there was more. Starting with his humble job on the tankcar-rack at Thrall for the pipe line division of Magnolia, he has been with the Magnolia organization ever since except for service in the World War. Successive upward steps carried him to a job on the pipe line gang; oiler in a pipe line station; engineer at the Addington, Okla., station; gauger in the Shamrock, Oklahoma, field; chief gauger in the Oklahoma district; district foreman in the Corsicana-Powell field; pipe line scout and solicitor of connections in the Wewoka-Cromwell area; superintendent of construction on the company's first welded main line from the Luling field. When the line was completed Mr. Latimer was placed in charge of operations in the Southwest Texas district, with headquarters in Luling. In August, 1934, he was made general superintendent for Magnolia Pipe Line Company in Texas, Louisiana and Arkansas. Recently he was advanced to his present position, with headquarters in Dallas.

Mr. Latimer married Miss Leone Heins, of Tulsa, in 1925. They reside in Dallas and have two daughters.

ROY CALKINS of Houston, Tex., is now associated with the sales force of the W-K-M Company at Houston.

R. A. BROOMFIELD, president of Barnsdall Oil Company, returned to his office in Los Angeles, Calif., last week after an extended stay in Bakersfield, Calif.

E. M. LANE, field superintendent for Rieber Laboratories in Los Angeles, Calif., has been placed in charge of the first new branch office at Houston, Tex.

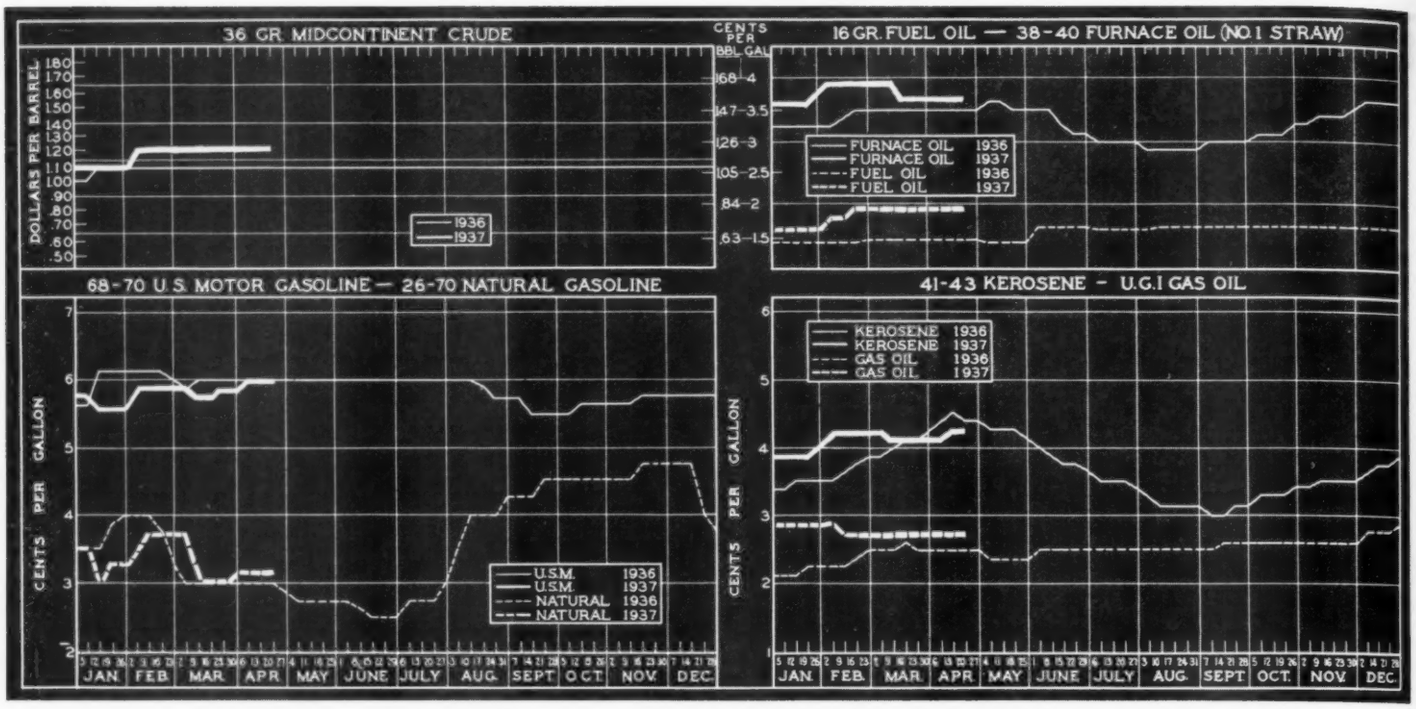
C. E. EDGERTON, former geologist with the Wilcox Oil & Gas Company, has joined the Republic Production Company, which maintains offices in the Alamo National Building, San Antonio, Tex.

TOM TAGGART, manager of Standard Gasoline Company and past president of the California Natural Gasoline Association, is active in presentations of the Little Theatre at Palos Verdes, Calif.

L. E. FERGUSON, manager of the tubular sales division of Lucey Products Corporation, Tulsa, is in Cleveland, Ohio, where he will spend a week in the tube mill of Republic Steel Corporation.

EARNEST MERRILL, petroleum engineer for Shell Oil Company at Long Beach, Calif., after a visit in Tulsa will go to New York, and on July 7 will leave for the company's headquarters at The Hague, Holland.

EDWARD J. CONDON of Houston, Tex., has been elected president of the newly incorporated United East and West Production Company, of Louisiana. A. B. FREYER of Shreveport, La., has been elected vice president, and JAMES M. CONDON of Houston, secretary-treasurer.



Representative Mid-Continent Quotations on Crude Oil and Refined Products. Basis Oklahoma (Group 3)

Expanding Gasoline Demand Imparts Firmer Tone to Group 3 Market

By T. F. SMILEY

Slowly broadening demand for gasoline imparted a slightly firmer tone to the market in the Group 3 area this week, and confidence continued to be expressed that the approaching summer would see all preceding gallonage records fall. The trade was waiting for the weather man to give a little more whole-hearted cooperation, though nobody was complaining about the volume of business already developed. Side roads in much of the Northwest are still in such condition as to discourage motor travel. As these are opened up the spot demand for gasoline should be enlivened.

Turning Away Business

Although the total demand for third-grade gasoline has been diminishing steadily as new cars, with their high-compression engines, have taken the place of old models, there is right at this juncture a ready outlet for all of that material produced. This results in great measure from the fact that many refiners have discontinued making it. Efforts of buyers to pick up some of it in the Gulf Coast in the past week were fruitless. Neither refiners nor brokers were able to accept proffered business. Some regular-grade material was available, though none of it seemed to be hunting purchasers. East Texas refiners were turning away orders for low-octane motor fuel.

Opinion that the price of crude would be advanced soon was not so definite as it was a week ago. Two months ago tankcar prices were distinctly out of line with the cost of crude. The refiner is getting about a quarter-cent more for his gasoline now, but just as he begins to feel that he has caught up with the higher cost of his raw material and can make a reasonable profit he faces the likelihood of another raise. He is in a better position strategically now than he was then, however, for at that time the demand for gasoline was its low point of the year and stocks were mounting at such a rate as to make higher prices out of the question. It is believed a crude advance now would have only a passing effect on the gasoline market, for with the season of heavy consumption setting in, there should be little difficulty in keeping the tankcar price in balance with crude costs.

Refined Oil Market Barometer

All areas report improved buying of gasoline, with firming of quotations and promising outlook for huge summer gallonage. Curtailed production of third-grade material has created a tight market for such as is available. A similar condition prevails in the heating oils. Tractor fuels are in active demand. Aided by brisk export business, lubricants are in good position.

MID-CONTINENT. Gasoline firmer. Tractor fuels strong. Natural slow. Lubricants steady.

EAST COAST. Gasoline improving. Fuel oils steady. Lubricating stocks tapering off.

GULF COAST. Gas oil firm. Gasoline strong. Kerosene steady.

CALIFORNIA. Market quiet but stable. Gasoline demand good.

PENNSYLVANIA. Gasoline, kerosene and fuel oil firmer. Lubricants continue strong.

CHICAGO. Gasoline demand expanding. Burning oils slow. Kerosene holding. Few price changes.

The call for tractor fuels was rising, and refiners reported a heavy movement into agricultural areas where spring plowing is now well under way. Some of the heaviest demand is yet to come from regions in the Northwest where farm land is not dry enough to work. Kerosene was holding well. North Texas refiners were able to command a slightly better price than prevailed in Oklahoma. An explanation offered was that local demand was sufficiently high to make it unnecessary to ship into competitive territory. Rural consumption in northern regions was keeping the Oklahoma market satisfactorily firm.

Lubricants Acting Well

The whole lubricant group was steady, with demand absorbing all offerings. The export buying of bright and steam-refined stocks was active, and the overseas movement of neutrals was reported the heaviest in years. The continuance of a fairly high level of consumption in the motor oils is a subject of comment in view of the fact that modern motor vehicles are run many more miles than the old models without change of oil. Two factors contributing to the gratifying high level of demand are the great number of old-model cars still on the highways and the sharp upturn in automobile buying attending economic recovery.

Conditions in the natural gasoline market showed virtually no change. Demand was sufficient to absorb current output, but any move in the direction of higher prices dulled the will to buy. The Texas market was somewhat firmer than that in Oklahoma. Production of heating oils had been curtailed so that there seemed little difficulty in disposing of such as were available.

Fractionally Higher Gasoline Prices Appear in East Coast Territory

By H. STANLEY NORMAN

NEW YORK, Apr. 20. — Fractionally higher prices for tankcar gasoline appeared last week for the first time this spring in northern Atlantic Coast territory. Buoyed by heavier movement into consuming channels, the gasoline market evidenced definite movement into higher ground.

Although there has been no change yet in quoted gasoline prices, the turn has practically eliminated sales below posted figures. One or two barge sales in New York harbor territory were reported last week at 7 cents per gallon for 65-octane motor fuel. Up until two weeks ago and extending back as far as December, 65-octane gasoline was available in limited quantities for 6½ to 6¾ cents per gallon with some sellers even making barge deliveries for eighth of a cent less.

Favored by several days of moderate spring temperatures, retailers and resellers are ordering out record stocks of gasoline from ocean terminals. Another factor contributing to heavier movement in the north Atlantic Coast territory is early opening of the New York barge canal, permitting resumption of deliveries to inland points which have been out of the market for the winter months. Advent of the motoring season to historic and scenic points in up-state New York and adjacent territory has developed a demand in those sections which was curbed to a minimum during winter months.

Another contributing factor to the stimulated gasoline market is the firm condition existing on the Gulf Coast. Refiners on the Gulf are moving much gasoline in export trade, leaving a healthy condition for the coastwise business. Furthermore, there has been no slackening of tanker rates compelling dealers to require a higher price at the point of delivery.

Benefit from the improved gasoline market extended into western Pennsylvania where producers of U. S. Motor were asking and receiving 5 cents per gallon, up a half cent from the preceding week's quotations. Pennsylvania market recovery was made possible partially through shipments into Indiana, Michigan and even into Wisconsin, states normally served from the Mid-Continent group. In addition, considerable U. S. Motor gasoline was purchased within western Pennsylvania for reforming, even at the higher price prevailing during the past week.

Following the general increase in business and tightening of the tankcar market, rumors were current at end of last week that tankwagon prices in the New York district would be advanced a half cent per gallon. Talk was also heard that "low-pressure" retail areas probably will be advanced somewhat in the near future, although general retail conditions are on fairly stable foundation. Below normal prices continue to prevail in metropolitan New York, in New England, around Newark, N. J., and in the Philadelphia district.

Light fuel oils continue to run contrary to seasonal expectations, although most of the current movement is on a hand to mouth basis. Consumption is holding at higher levels and for a more sustained period than many had anticipated, leaving stocks on the Atlantic Coast in particularly strong position. Some of the major suppliers who turned their attention to gasoline during the last half of March and the first of April are obtaining their supplies in the open market. There is no tendency, however, for any of the fuel oil handlers to stock large quantities at this season of the year and it seems only a matter of days or weeks until full force of the seasonal slump will be felt.

On the other hand, heavy oils are in firm demand and prices are steady, a set of conditions which marketers feel will be at least sustained and probably improved with greater industrial demand this summer. Bunker C grade fuel oil is reported in particularly strong position with quotations of $1.20 prevailing in New York harbor. Rumors were circulated last week that one or two barges sold for a 5-cent premium last week. Hardly without exception, trans-Atlantic shipping lines report sufficient bookings to keep their passenger vessels operating at full speed and capacity during early summer, a condition which may indicate higher bunker prices early in the season.

Current tankcar sales of No. 2 fuel oil are generally reported at 4.75 cents per gallon in the northeastern territory, excepting in New York where a quarter of a cent less prevails. Some quotations at New England terminals on No. 2 fuel oil ranged up to 5 and 5.25 cents per gallon, but open market tankcar sales at these figures were infrequent.

Export movement of gas oil from the Gulf Coast has also contributed to tightness of light fuels in the north Atlantic territory. Last week's Gulf Coast business was a continuance of interest in gas oil for export accounts. One sale was reported at 3.875 cents per gallon under hatch at the Gulf for May lifting. The sale was negotiated in behalf of a French customer. One cargo of No. 2 fuel oil for coastwise movement was sold on the Gulf Coast at 4 cents per gallon.

Thre is no 65-octane gasoline offered currently on the Gulf Coast at less than 6.25 cents per gallon. Several sales earlier this month to domestic and export accounts at 6.125 cents per gallon apparently absorbed all material available at the lower figure.

A cargo of approximately 60,000 bbls. of gasoline was taken aboard at the Houston docks of Crown Central Oil Co. last week by the Spanish lovalist tanker Campoamor. The cargo is billed for Bilbao, Spain, but the consideration and specifications covering the shipment were not available. It was the first ship to fly the Spanish flag in the Houston port since the revolution started.

Interest in lubricating stocks tapered off somewhat last week, but prices were steady and sufficient movement was reported to maintain the market at unchanged rates. Several refiners are still working to fill orders booked ahead, but probably will be in position to quote on the open market within a few weeks unless conditions are altered meanwhile. Most of the current open market business on lubricating stocks is originating with small-lot buyers with majors ordering out material against previously negotiated contracts. Kerosene was fairly active in the western Pennsylvania district last week, but was reported dull on the Gulf Coast cargo market and was inactive in the north Atlantic tankcar business. Prices are reasonably firm, probably in anticipation of business expected to develop soon in spring plowing regions. Opening of the New York barge canal will make possible delivery of kerosene in the agricultural sections, which is probably a factor in maintaining prices at previous levels despite the lack of business for several weeks.

Reports reached New York last

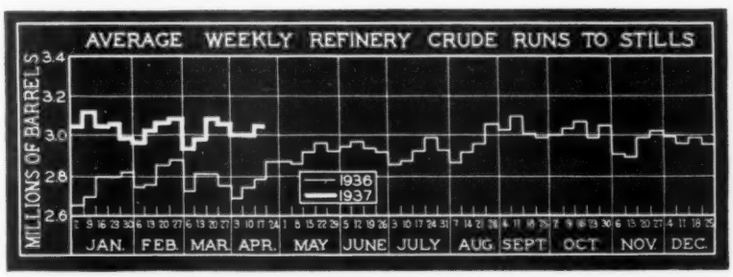
(Continued on Page 120)

A. P. I. Weekly Refinery Statistics

Week Ending April 17, 1937

	Capacity reporting (per cent)	Daily crude runs (bbls.)	Total gasoline (bbls.)	Gas oil and fuel oil (bbls.)
East Coast	100.0	514,000	18,544,000	5,709,000
Appalachian	88.4	106,000	2,869,000	513,000
Indiana, Illinois, Kentucky	92.1	436,000	14,454,000	4,411,000
Oklahoma, Kansas, Missouri	84.6	284,000	9,490,000	2,850,000
Inland Texas	54.3	129,000	2,230,000	1,320,000
Texas Gulf	95.5	660,000	11,080,000	6,532,000
Louisiana Gulf	96.3	127,000	1,521,000	1,633,000
North Louisiana and Arkansas	63.7	45,000	446,000	220,000
Rocky Mountains	69.7	42,000	2,052,000	727,000
California	90.9	488,000	14,599,000	68,061,000
Total reported	88.8	2,831,000	77,285,000	91,976,000
Estimated unreported	.....	224,000	5,418,000	2,496,000
*Estimated total	.....	3,055,000	82,703,000	94,472,000
*Estimated total previous week	.....	3,005,000	82,579,000	94,581,000
*April 18, 1936	.....	2,755,000	73,654,000	96,508,000

*Bureau of Mines basis, currently estimated.



Stocks of Crude Oil in the United States

(BUREAU OF MINES ESTIMATES)

April 3, 1937	297,374,000 barrels
March 27, 1937	293,587,000 barrels
April 4, 1936	312,974,000 barrels

RETAIL OIL MARKETS

Tank-wagon and filling station prices on gasoline and kerosene furnished by the larger marketing firms

Prices as of April 20, 1937

Taxes

The gasoline quotations given in the following tables include the 1-cent federal tax, as well as state, county and city taxes. The gasoline is the regular or standard grade. In most areas a third grade and a premium grade are also available.

Standard Oil Co. (Indiana)

	Gasoline Tank wag.	Gasoline Dlr.	Gasoline Inc. tax	Kero. tank wag.
Chicago, Ill.	16 0	14 0	4 0	10 1
Decatur	16 0	14 5	4 0	10 1
Joliet	16 0	14 5	4 0	10 1
Peoria	16 0	14 5	4 0	10 1
Quincy	15 8	14 3	4 0	9 9
Davenport, Ia.	16 0	14 5	4 0	10 1
Des Moines	15 8	14 3	4 0	9 9
Mason City	16 2	14 7	4 0	10 3
Sioux City	16 0	14 5	4 0	10 1
Duluth, Minn.	16 8	15 3	4 0	10 9
Mankato	16 4	14 9	4 0	10 5
Twin Cities	16 4	14 9	4 0	10 5
La Crosse, Wis.	17 4	15 9	5 0	10 5
Green Bay	17 7	16 2	5 0	10 8
Milwaukee	17 3	15 8	5 0	10 4
Detroit, Mich.	15 1	13 6	4 0	9 8
Grand Rapids	16 5	15 0	4 0	10 9
Saginaw	16 3	14 8	4 0	8 5
Evansville, Ind.	17 5	16 0	5 0	†10 6
Indianapolis	17 7	16 2	5 0	†9 6
South Bend	17 9	16 4	5 0	†9 6
Fargo, N. Dak.	17 4	15 9	4 0	11 5
Minot	18 6	17 1	4 0	12 7
Huron, S. Dak.	17 8	16 3	5 0	10 9
Kans. City, Mo.*	15 4	13 9	4 0	8 9
St. Louis*	15 7	14 2	4 0	9 8
St. Joseph*	15 4	11 9	4 0	6 9
Wichita, Kans.	14 9	13 4	4 0	8 9

*State tax 2 cents, 1-cent city tax and 1-cent federal tax. †Does not include 4-cent state tax.

(Exclusive of state general sales taxes, except Indiana and South Dakota.)

Discounts to commercial consumers: On purchases per month off tank-wagon prices: 1,000 gallons or more, 1.5 cents off; minimum delivery 25 gallons.

Stanolex Fuel Oil in Chicago

Effective Dec. 7, 1936, f.o.b. Chicago tank-wagon prices: Range oil, 1-99 gallons, 8.8 cents; 100-149 gallons, 7.8 cents; 150 gallons and over, 7.3 cents. Stanolex No. 1, 1-99 gallons, 8.8 cents; 100-149 gallons, 7.8 cents; 150 gallons and over, 7.0 cents. Stanolex furnace oil, 1-149 gallons, 7.8 cents; 150 gallons and over, 7.0 cents. Stanolex A, 1-399 gallons, 5.75 cents; 400 gallons and over, 4.75 cents. Stanolex B, 1-799 gallons, 5.75 cents; 800 gallons and over, 4.75 cents.

Atlantic Coast District

STANDARD OIL CO. OF NEW JERSEY

	Gasoline Tank wag. dlr.	Gasoline Tank car con'r.	Gasoline Inc. tax	Kero. tank wag.
Atl'tic City, N. J.	13 0	11 5	4 0	8 0
Newark	12 5	11 0	4 0	8 0
Annapolis, Md.	15 1	13 6	5 0	10 0
Baltimore	14 5	13 0	5 0	8 5
Cumberland	16 9	14 4	5 0	10 0
Wash'g'n, D. C.*	12 5	11 0	3 0	9 0
Danville, Va.	17 7	15 2	6 0	12 9
Norfolk	16 5	14 0	6 0	11 5
Petersburg	16 8	14 3	6 0	11 7
Richmond	16 8	14 3	6 0	11 7
Roanoke	18 0	15 5	6 0	12 9
Charles'n, W. V.	16 3	13 8	6 0	12 6
Parkersburg	15 6	13 1	6 0	11 2
Wheeling	15 5	14 0	6 0	12 2
Charlotte, N. C.	18 9	16 4	7 0	13 6
Hickory	19 4	16 9	7 0	13 0
Mt. Airy	19 2	16 7	7 0	12 8
Raleigh	18 5	16 0	7 0	12 1
Salisbury	19 0	16 5	7 0	12 7
Charleston, S. C.	17 5	15 0	7 0	11 1
Columbia	18 5	16 0	7 0	12 1
Spartanburg	19 2	16 7	7 0	12 9

*Standard of N. J. has discontinued posting service-station prices at all above points except at Washington where a station price of 16 cents is in effect.

Price basis to commercial consumers, effective March 8, 1937, in Maryland, District of Columbia, and in Arlington and Fairfax counties in Virginia; and March 12 in New Jersey: To contract accounts purchasing at least one full compartment at time by hose connection, on yearly purchases: From 2,500 to 100,000 gallons, consumer tank-wagon price at time and place of delivery; 100,000 gallons per year, consumer tankcar price plus .5 cent per gallon. Consumer tank-wagon price generally will be equivalent to dealer tank-wagon price less .5 cent per gallon.

Effective March 22, 1937, in West Virginia, commercial consumer taking tank-wagon or barrel delivery of 100 gallons or more at one time, 2 cents per gallon over consumer tankcar price in effect at time and place of delivery; less than 100 gallons, 6 cents per gallon above consumer tankcar price.

Effective Jan. 25, 1937, in North and South Carolina and effective Feb. 27 in Virginia, except in Arlington and Fairfax counties: Deliveries of 50 gallons or more by tank-wagon billed at price 2 cents over posted consumer tankcar price in effect at time and place of delivery. Deliveries less than 50 gallons billed at price 6 cents over posted tankcar price. Discount for kerosene, 1 cent off tank-wagon price for 25 gallons or more under contract (contract not necessary in Baltimore) except no discount in New Jersey.

Southern District

STANDARD OIL CO. OF KENTUCKY

	Gasoline Tank wag.	Gasoline Net dlr.	Gasoline Inc. tax	Kero. tank wag.
Atlanta, Ga.	22 0	19 0	7 0	*13 0
Augusta	18 5	15 5	7 0	*14 0
Macon	21 5	18 5	7 0	*14 5
Savannah	20 0	17 0	7 0	*13 0
Birm'ham, Ala.	21 0	18 0	8 0	12 0
Mobile	22 0	19 0	9 0	11 0
Montgomery	23 0	20 0	9 0	12 5
Jackson, Miss.	21 0	18 0	7 0	*13 0
Vicksburg	20 5	17 5	7 0	*13 0
Jacksonville, Fla.	20 5	17 5	8 0	11 0
Miami	21 5	18 5	8 0	12 5
Pensacola	22 0	19 0	9 0	12 0
Tampa	21 5	18 5	8 0	11 0
Lexington, Ky.	19 5	16 5	6 0	11 0
Covington	19 0	16 0	6 0	11 0
Louisville	19 5	16 5	6 0	10 5
Paducah	19 0	16 0	6 0	10 0

Price basis to tank-wagon consumers: Effective January 4, 1937, 3 cents per gallon below tank-wagon price. Kerosene prices in all states subject to 2 cents discount except in Kentucky where prices are net.

*Includes 1 cent state tax. Montgomery, Ala., has a county tax of 1 cent per gallon, and a city tax of 1 cent per gallon on gasoline, in addition to state tax; and 1 cent per gallon on kerosene. Mobile, Ala., has a city gasoline tax of 2 cents per gallon; Birmingham, Ala., has a city gasoline tax of 1 cent per gallon; Pensacola, and Tampa, Fla., have a city gasoline tax of 1 cent.

Rocky Mountain District

CONTINENTAL OIL CO.

	Gasoline Dealer	Gasoline Inc. tax	Kero. tank wag.
Denver, Colo.	17 5	5 0	11 5
Grand Junction	20 0	5 0	15 0
Pueblo	15 0	5 0	10 5
Casper, Wyo.	18 0	5 0	11 5
Cheyenne	18 0	5 0	13 0
Butte, Mont.	19 5	6 0	15 5
Billings	21 5	6 0	15 5
Helena	21 5	6 0	15 5
Great Falls	21 5	6 0	15 5
Salt Lake, Utah	19 5	5 0	16 0
Twin Falls, Ida.	21 5	6 0	18 0
Boise	21 0	6 0	18 0
Albuquerque, N. M.	17 5	6 5	12 0

Ohio

STANDARD OIL CO. OF OHIO

	Gasoline Tank wag. con'r.	Gasoline Dlvided dlr.	Gasoline Inc. tax	Kero. tank wag.
Ohio points	17 0	16 0	5 0	*13 5

*Includes state tax of 1 cent.

Divided dealer price is also price to authorized agents, exclusive of .5 cent rental. Tank-wagon price is price to commercial consumers in deliveries of 25 gallons or more; less than 25 gallons get service-station price.

Pacific Coast Territory

STANDARD OIL CO. OF CALIFORNIA

	Gasoline Tank wag.	Gasoline Serv. sta.	Gasoline Inc. tax	Kero. tank wag.
San Francisco	17 5	18 5	4 0	11 5
Los Angeles	17 0	‡18 0	4 0	9 0
Fresno, Calif.	18 5	19 5	4 0	12 0
Phoenix, Ariz.	21 0	22 0	6 0	‡16 0
Reno, Nev.	20 0	21 0	5 0	13 0
Portland, Ore.	20 0	21 0	6 0	13 5
Seattle, Wash.	20 0	21 0	6 0	13 5
Spokane	23 0	24 0	6 0	16 5
Tacoma	20 0	21 0	6 0	13 5

‡Includes 5-cent state tax.

Discounts to dealers: On gasoline, off tank-wagon price, to 100 per cent dealers, 3 cents; to split dealers, 2 cents. To commercial consumers: on tank-wagon price: on single deliveries of 40 gallons and over, advance quantity discount extended at time of delivery, 3 cents. Service station schedule applies on single deliveries less than 40 gallons. On kerosene in tankcar, transport truck and trailer delivery, 3 cents off tank-wagon price; plant deliveries to jobbers, 2.5 cents below tank-wagon.

New York and New England

SOCONY-VACUUM OIL CO., INC.

	Gasoline Tank wag. dlr.	Gasoline Tank car con'r.	Gasoline Inc. tax	Kero. tank wag.
Albany, N. Y.	14 0	12 5	4 0	7 75
*Met. N. Y.:				
Manh't'n, Br'nx	13 5	12 0	4 0	7 25
Staten Island	13 75	12 0	4 0	7 25
Q'ns & Brklyn	13 5	12 0	4 0	7 25
Buffalo	14 3	12 67	4 0	8 25
Rochester	14 3	12 74	4 0	8 25
Syracuse	14 3	12 7	4 0	8 75
Boston, Mass.	14 0	12 5	4 0	7 50
Portland, Me.	15 8	13 5	5 0	7 75
Manch'ter, N. H.	16 3	14 0	5 0	8 00
Burlington, Vt.	15 9	13 9	5 0	8 75

*Does not include 2 per cent city sales tax which is calculated on basis of net retail price exclusive of state and federal taxes.

Price basis to undivided dealer: Posted dealer tank-wagon price less .5 cent. Price basis to commercial consumer: Effective Nov. 15, 1936, monthly purchases of 25,000 gallons and over, consumer tankcar prices at delivery point plus .5 cent per gallon; monthly purchases of 5,000 to 25,000 gallons, undivided dealer price at delivery point: Monthly purchases under 5,000 gallons, pay divided dealer tank-wagon price at delivery point.

Pennsylvania, Delaware and Part of New England

ATLANTIC REFINING CO.

	Gasoline Tank wag. dlr.	Gasoline Tank car con'r.	Gasoline Inc. tax	Kero. tank wag.
Philadelphia, Pa.	14 0	12 5	5 0	10 5
Pittsburgh	15 5	13 5	5 0	11 0
Allentown	14 5	13 25	5 0	11 0
Erie	14 5	13 0	5 0	10 0
Scranton	14 5	13 25	5 0	11 0
Altoona	15 5	13 5	5 0	11 0
Dover, Del.	14 5	....	5 0	11 0
Wilmington	13 5	....	5 0	11 0
Springf'd, Mass.	14 8	....	4 0	7 75
Worcester	14 8	....	4 0	8 0
Hartford, Conn.	14 6	....	4 0	7 0
New Haven	14 0	....	4 0	7 0
Providence, R. I.	13 0	....	3 0	7 75

Atlantic has transferred all stations to dealers except in Philadelphia and Pittsburgh where prices are 17.5 and 20.0 cents per gallon respectively.

Price basis to undivided dealers—Dealer tank-wagon less .5 cent per gallon.

Consuming accounts not under contract—when made by tank-wagon in quantities of 50 gallons or over, dealer price.

Commercial accounts under contract—annual consumption 2,500 to 100,000 gallons per year, 1 cent above posted tankcar price; over 100,000 gallons per year, .5 cent above posted tankcar price.

Central South District

STANDARD OIL CO. OF LOUISIANA

	Gasoline Tank wag. dlr.	Gasoline Tank car con'r.	Gasoline Inc. tax	Kero. tank wag.
N. Orleans, La.	20 0	17 5	*10 0	†14 0
Baton Rouge	18 0	15 5	8 0	12 0
Alexandria	18 5	16 0	8 0	12 0
Lafayette	19 0	16 5	8 0	12 5
Lake Charles	19 0	16 5	8 0	12 5
Shreveport	17 5	15 0	8 0	9 5
Knoxville, Tenn.	21 0	18 5	8 0	14 0
Memphis	19 0	16 5	8 0	12 0
Chattanooga	20 5	18 0	8 0	13 5
Nashville	20 0	17 5	8 0	11 0
Bristol	19 75	18 5	8 0	14 5

*Includes 2-cent parish tax. †Includes 1-cent parish tax and 1-cent state tax.

Standard of La. has transferred all stations to dealers except in New Orleans and Baton Rouge where station prices are 23.5 and 21.5 cents per gallon, respectively.

Price basis to commercial consumers: Effective Dec. 21, 1936, deliveries of 50 gallons or more in one delivery, posted consumer tankcar price plus 2 cents per gallon; consumers taking deliveries of less than 50 gallons at one time pay posted consumer tankcar price plus 6 cents per gallon.

Louisiana kerosene prices include 1-cent state tax.

Nebraska

STANDARD OIL CO. OF NEBRASKA

	Gasoline Tank wag.	Gasoline Dlr.	Gasoline Inc. tax	Kero. tank wag.
Omaha	18 4	16 9	6 0	10 4
McCook	18 0	14 0	6 0	10 0
Norfolk	18 8	17 3	6 0	10 8
North Platte	19 2	17 7	6 0	11 2
Scotts Bluff	19 9	18 4	6 0	10 9

Discounts to commercial consumers for tank-wagon deliveries covered only by standard commercial consumers contract, effective Jan. 1, 1935.

Naphtha

STANDARD OIL CO. (INDIANA)

	Tank-wagon*
Oleum spirits	15 7
V.M.&P. naphtha	16 0
Cleaners' naphtha	15 0
Stanisol	15 0

*Prices include 3-cent Illinois tax, but not 1-cent federal tax or 2 per cent retail occupational tax.

Prices f.o.b Chicago. Each price subject to discount of 1 cent per gallon for 150 gallon lots if covered by contract.

Oklahoma and Arkansas

CONTINENTAL OIL CO.

	Gasoline Dealer	Gasoline Inc. tax	Kero. tank wag.
Muskogee, Ok.	15 5	5 0	7 0
Oklahoma City	13 0	5 0	8 0
Tulsa	14 0	5 0	6 0
Ft. Smith, Ark.	15 0	5 0	10 0
Little Rock	17 5	7 5	9 5
Texarkana	15 0	5 0	9 0

Texas

	Gasoline Tank wag.	Gasoline Serv. sta.	Gasoline Inc. tax	Kero. tank wag.
Dallas, Tex.	14 0	18 0	5 0	8 0
Fort Worth	14 0	18 0	5 0	8 0
Houston	14 5	18 5	5 0	8 0
San Antonio	14 5	18 5	5 0	8 0

Canada*

3 Star Imperial Gasoline
IMPERIAL OIL, LTD.

	Gasoline Tank wag.	Gasoline Serv. sta.	Gasoline Inc. tax	Kero. tank wag.
Hamilton, Ont.	22 0		6 0	17 0
Toronto, Ont.	22 0	24 5	6 0	17 0
Brandon, Man.	29 8	32 8	7 0	22 8
Winnipeg, Man.	28 2	31 2	7 0	20 7
Regina, Sask.	29 5	....	7 0	22 0
Saskatoon, Sask.	32 3	....	7 0	24 8
Edmonton, Alta.	30 5	33 5	7 0	24 2
Calgary, Alta.	28 0	31 0	7 0	21 5
Vancouver, B. C.	22 0	26 0	7 0	23 0
Montreal, Que.	19 0		6 0	17 5
St. John, N. B.	24 0	28 0	8 0	18 5
Halifax, N. S.	24 0	28 0	8 0	18 5

*Imperial gallon used in Canada.

Discount to dealers: Divided dealers pay 3 cents per gallon below station price; undivided dealers pay 4 cents per gallon below station price except in cities of Hamilton, Toronto and Montreal when discounts below station prices are one-half cent per gallon less and in Vancouver where discounts are 1 cent per gallon more.

Retail Price Changes

Standard Oil Co. of Louisiana March 31 reduced tank-wagon kerosene 2 cents at Nashville.

New York Market

(Continued from Page 119)

week that a cargo of East Texas crude oil sold for $1.52 per barrel, under hatch on the Gulf Coast. Presuming that normal charges of 5 cents for gathering, 12½ cents for pipe line movement and 2½ cents over the dock prevailed, the reported consideration would represent a premium of about 5 cents per barrel. Whether the premium was paid in the field and other details could not be learned, but the report revived discussion in the east of crude oil market conditions. Among major executives there remains considerable division of opinion on justification of another crude advance. Increase of crude oil stocks during the past few weeks is held up by some as indication that an advance is not warranted at the moment. Others take the position that the slight additions to stocks will be liquidated early in the consuming season.

PRICES OF REFINED PRODUCTS

All quotations f.o.b. plant in cars for interstate or export movement except as otherwise noted

Prices as of April 20, 1937

The following quotations are exclusive of the federal excise taxes of 1 cent a gallon on gasoline and 4 cents on lubricating oils.

Refinery Gasoline

OKLAHOMA (Group 3)—

U. S. Motor grades:		
62 oct. and below (3d gr.)	.05	.05¼
63-67 octane	.05⅜	.05½
68-70 octane (regular)	.06	.06¼
60-62 400 grades:		
62 oct. and below (3d gr.)	.05	.05¼
63-67 octane	.05⅜	.05½
68-70 octane (regular)	.06	.06¼
64-66 375	.05⅛	.05¼
68-70 360	.05⅜	.05⅝

NORTH TEXAS—

U. S. Motor grades:		
62 octane and below	.05	.05¼
63-67 octane	.05⅜	.05½
68-70 octane (regular)	.06	.06⅛
60-62 400	.05	.05¼
64-66 375	.05⅛	.05¼

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

U. S. Motor grades:		
62 octane and below	.05⅜	.05½
63-67 octane		.05¾
68-70 octane (regular)		.06¼

ARKANSAS (Ark., N. La., Miss. del.)—

U. S. Motor grades:		
62 octane and below		.05¼
63-67 octane	.05⅞	.06
68-70 octane (regular)		.06¼

CHICAGO (Based on Group 3)—

U. S. Motor grades:		
62 octane and below	.05	.05⅛
63-67 octane	.05⅜	.05½
68-70 octane (regular)	.06	.06⅛
60-62 400 grades:		
62 octane and below	.05	.05⅛
63-67 octane	.05⅜	.05½
68-70 octane (regular)	.06	.06⅛
64-66 375	.05	.05⅛
68-70 360	.05¼	.05⅜

PENNSYLVANIA (inland refineries)—

58-60 U. S. Motor:		
Below 60 octane	.05	.05⅛
60-64.9 octane	.06¾	.07
65-70 octane	.07	.07¼
64-66 375		.05¼
68-70 350		.05½

CALIFORNIA (domestic movement)—

54-58 U. S. Motor	.07½	.08½
58-60 400, 65 oct. and higher	.08¼	.09¼

EAST COAST (domestic)—

U. S. Motor below 60 octane:		
*New York (Bayonne)		.06¾
Baltimore		.06¾
U. S. Motor, 60-64.9 octane:		
*New York (Bayonne)		.07
Philadelphia	.07	.07¼
Boston		.07¼
Baltimore	.07	.07¼
Charleston, S. C.		.07¼
U. S. Motor, 65 and above:		
*New York (Bayonne)		.07¼
Philadelphia	.07¼	.07½
Boston		.07½
Baltimore	.07¼	.07½
Charleston, S. C.		.07½

*All grades of gasoline one-eighth to one-fourth cent less for barge shipments. New York harbor prices are for New York and New England delivery. Prices for New Jersey delivery one-fourth cent lower.

GULF COAST (domestic)—

U. S. Motor grades:		
Below 60 octane	.05¾	.05⅞
60-64.9		.06
65 octane and higher	.06¼	.06¼

Naphtha

PENNSYLVANIA (inland refineries)—

50-52 450 (blending)	.04⅞
52-54 450 (blending)	.04⅞
54-56 450 (blending)	.05

Natural Gasoline

OKLAHOMA (Group 3)—

Grade 26-70	.03⅛
Grade 18-55	.03¾

NORTH TEXAS—

Grade 26-70	.03⅛
Grade 18-55	.03¾

CALIFORNIA—

75-85 375-390	.06¾	.07½

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

Grade 26-70	.03⅜

Tractor Fuel

OKLAHOMA (Group 3)—

40-42 gr., 315-325 i.b.p., 110 flash, 540-550 e.p.	.04¼	.04⅜
41-43 gr., 300-350 i.b.p., 110-125 flash, 500-520 e.p.	.04⅜	.04½
46-48 gr., 210-230 i.b.p., 480 max. e.p.	.04⅞	.05

Kerosene

(All kerosene water white)

OKLAHOMA (Group 3)—

41-43	.04¼	.04⅜
42-44	.04⅜	.04½

NORTH TEXAS—

41-43	.04⅜

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

41-43	.04⅜	.04½

ARKANSAS (Ark., N. La., Miss. del.)—

41-43	.04⅝	.04¾

PENNSYLVANIA (inland refineries)—

45	.04⅞
46	.05
47	.05⅛

CHICAGO (Based on Group 3)—

41-43	.04⅛	.04¼
42-44	.04⅜	.04½

CALIFORNIA (Pac. Coast market)—

38-43 high burning test	.04	.05

NEW YORK (Bayonne, N. J.)—

41-43	.05½

***GULF COAST (domestic)—**

41-43	.05¼

*Barge price one-eighth cent lower.

Furnace Oil

OKLAHOMA (Group 3)—

No. 1 prime white, 38-42	.03⅞	.04
No. 1 straw, 38-40	.03⅝	.03⅞
No. 2 straw, 32-36	.03¼	.03⅜
No. 2 dark, 32-36	.03¼	.03⅜
No. 3, zero to 15, 28-32	.03⅛	.03¼
No. 3, 15 and above, 28-32	.02⅝	.02⅝

NORTH TEXAS—

No. 1 prime white, 38-42	.03⅞	.04
No. 1 straw, 38-40	.03¾	.03⅞

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

No. 2, 32-36	.03⅜	.03½

ARKANSAS (Ark., N. La., Miss. del.)—

No. 2, 32-36	.03⅝	.03¾

CHICAGO (based on Group 3)—

No. 1 prime white, 38-40	.03⅞	.04⅛
No. 1 straw, 38-40	.03⅝	.03¾
No. 2 straw, 32-36	.03¾	.03⅝
No. 2 dark, 32-36	.03¼	.03½
No. 3 zero to 15, 28-32	.03¼	.03⅜
No. 3, 15 and above, 28-32	.02½	.02⅝

NEW YORK (Bayonne, N. J.)—

*No. 1	.05¾
*No. 2	.05
*No. 4	.04¾

*Barge deliveries one-eighth to one-fourth cent under above, tankcar price.

Gas Oil and Fuel Oil

(Gas oil per gal.; fuel oil per bbl.)

OKLAHOMA (Group 3)—

U.G.I. gas oil	.02¾	.02⅞
No. 4, low cold test, 24-28	1.10	1.15
No. 4, 15 and above, 24-28	.90	.95
No. 5, low cold test, 18-22	.87½	.92½
Below 18 fuel oil, industrial	.80	.87½

NORTH TEXAS—

U.G.I. gas oil	.02¾	.02⅞
No. 4, low cold test, 24-28	1.10	1.15
No. 5, low cold test, 18-22	.87½	.92½
Below 18 fuel oil, industrial	.80	.85

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

10-14 fuel oil, industrial	.75	.80

ARKANSAS (Ark., N. La., Miss. del.)—

10-14 fuel oil, industrial	.70	.72½

CHICAGO (Based on Group 3)—

U.G.I. gas oil	.02¾	.02⅞
No. 4, low cold test, 24-28	1.10	1.15
No. 4, 15 and above, 24-28	.90	.95
No. 5, low cold test, 18-22	.87½	.92½
No. 6, low cold test, 10-16	.80	.85

PENNSYLVANIA (inland refineries)—

36-40	.04⅜	.04½

CALIFORNIA—

Los Angeles:		
30-34 gas oil, per bbl.	1.10	1.25
24 plus diesel, per bbl.	1.10	1.25
24 plus diesel (bunkers)	1.15	1.35
12-16 (bunkers at tidewater)	.90	.100
10-16 (cargo lots)	.75	.95
12-17 (tankers)	.75	.95
San Joaquin Valley:		
10-18 (tankcars)	.70	.90
24 plus diesel, per bbl.	1.00	1.35
San Francisco:		
27 plus diesel		1.40
24 plus diesel (bunkers)		1.40
10-16 (bunkers)		1.00

GULF COAST—

28-30 gas oil	.03⅞	.04⅛
28-30 diesel (bunkers)		1.65
Bunkers (bulk cargoes)		.95
Bunker C (bunkers)		1.00

NEW YORK (Bayonne, N. J.)—

27 plus, gas oil	.04¾
28-30 diesel (lighterage 6¼c per bbl.)	1.85
28-30 diesel (tankcars)	.04¾
*Bunker C (to ocean-going ships in N. Y. harbor)	1.50
Industrial fuel (tankcars)	.04½

*Lighterage charge 5c bbl. additional.

Bright and Steam Refined

OKLAHOMA (Group 3)—

Bright Stocks:		
190-200 D, 15-25		.23
150-160 D, 0-10		.20
150-160 D, 15-25		.19½
150-160 E, 15-25		.19
100-110 D, 0-10		.18
Steam refined:		
631 green (treated)		.17½
600 dark green (untreated)		.05

PENNSYLVANIA—

Bright Stocks (Pennsylvania Grade No. 8 color, 145-50 at 210, 540-550 flash):		
10 pour test	.28	.28½
15 pour test	.27	.27½
20 pour test	.26	.26½
25 pour test	.25	.25½
Steam refined:		
600		.17½
650		.19
600 Pennsylvania flash		.20
630 flash		.24
600 Warren E filtered		.20

Neutral Oil

(Vis. at 100° F. except Pennsylvania and color N.G.A.)

OKLAHOMA (Group 3)—

Zero to 10 Cold Test:		
150-3		.09
180-3		.10
180-4		.09½
200-3		.10½
200-4		.10
250-3		.11½
250-4		.11
280-3		.12½
280-4		.12
300-3½		.13
400-3½		.14
100-2½ paraffin oil		.05¾
15-20 Cold Test:		
200-3		.10
200-4		.09½
250-3		.11
250-4		.10½
280-3		.12
280-4		.11½

GULF COAST—

Pale Oils:		
200-3	.07	.07¼
300-3	.07½	.07¾
500-3½	.08½	.08¾
750-3½	.08⅝	.09¼
1,200-3½	.09½	.09¾
1,500-4	.09¾	.10
Red Oils:		
200-5-6		.07
300-5-6	.07¼	.07½
500-5-6	.08	.08½
750	.08¾	.09
1,200-5-6	.09¼	.09½

CALIFORNIA (moving to dom. market)

Pale Oils:		
100-2½-3	.07	.08
200-2½-3	.07	.08
300-2½-3	.07	.08
400-3-4	.09	.11
540-3-4	.09	.11
550-3-4	.09	.11
600-3-4	.09	.11
Red Oils:		
200-4-5	.07	.08
300-5-6	.07	.08
350-5-6	.10½	.11½
400-5-6	.10½	.11½
450-5-6	.10½	.11½
500-5-6	.10½	.11½
600-5-6½	.10½	.11½
700-6½ plus	.10½	.11½
750-6½ plus	.10½	.11½
900-6½ plus	.10½	.11½

PENNSYLVANIA—

150 vis. at 750° F. color, 400-405 flash:		
Zero pour test	.24½	.25
10 pour test	.23½	.24
15 pour test	.23	.23½
25 pour test	.22	.22½
180 vis. at 70° F., 3 color:		
25 pour test	.24½	.25
200 vis. at 70° F., 3 color:		
Zero pour test	.28	.28½
10 pour test	.27	.27½
15 pour test	.26½	.27
25 pour test	.25½	.26

Wax and Petrolatum

(Prices per pound)

OKLAHOMA (Group 3)—

124-126 (a.m.p.) w.c. scale	.02¾

PENNSYLVANIA (inland refineries)—

122-124 (a.m.p.) w.c. scale	.0265	.0270
124-126 (a.m.p.) w.c. scale	.0270	.0275

NEW YORK—

Wax in bags fully refined:		
122-125 (a.m.p.) wax		.0445
125-127 (a.m.p.) wax		.0455
128-130 (a.m.p.) wax		.0480
130-132 (a.m.p.) wax		.0505
133-135 (a.m.p.) wax		.0535
135-137 (a.m.p.) wax		.0560
124-126 (a.m.p.) w.s.	.0250	.0255
124-126 (a.m.p.) y.s.	.0260	.0265
Petrolatum in barrels, carload lots:		
Dark green		.01⅞
Amber	.02⅞	.03
Extra amber	.03	.03⅛
Lily white	.06⅝	.06¾
Snow white	.07¾	.07⅞
Cream	.05⅝	.05¾

Export Prices

GASOLINE

GULF COAST—

U. S. Motor		.05¾
60-62 400		.05⅝
61-63 390	.05⅞	.06
64-66 375	.06⅛	.06¼

LOS ANGELES—

U. S. Motor grades:		
53-55 octane		.04¾
55-65 octane	.04¾	.05
65-67 octane		.05
67-69 octane		.05¼
Above 69 octane	.05½	.06

KEROSENE

GULF COAST—

41-43 prime white		.05¼
41-43 water white		.05⅜
44 water white		.05⅝

LOS ANGELES—

41-43 water white	.04½	.05

LUBRICANTS

(Pennsylvania Grade)

NEW YORK (f.a.s. in bbls.)—

Cylinder Stocks:	
600 Warren E	.26½
600 S.R. unfiltered	.24
630 S.R. unfiltered	.25½
600 flash, S.R.	.26½
630 flash, S.R.	.30
Bright Stocks:	
8 color	.32
6½ plus color in dilution	.31½

NEUTRAL OIL

200-3 color	.31½
150-3 color	.27½

PARAFFIN WAX

NEW YORK (prices per pound)—

123-126 a.m.p.		.04125
125-127 a.m.p.		.0425
128-130 a.m.p.		.0450
133-135 a.m.p.		.0525
135-137 a.m.p.		.0550
Crude scale:		
124-126 w.s.	.0260	.0270
124-126 y.s.	.0245	.0250

CRUDE OIL PRICES

Oklahoma, Kansas, North Central and East Central Texas

(January 28, 1937)

East Texas*	$1 27
Van, Tex.†	1 10
Camp Hill, Tex.	1 27
Cass County, Tex.‡	1 25
Talco	73
Altus and Tipton, Okla.§	1 20
Other fields (see gravity table).	

*All companies. †Humble Oil & Refining Co.; Pure Oil Co. ‡Texas Co. §Gulf Oil Co. Talco by Humble Oil & Refining Co.

West Texas

See gravity table.

Pecos County*	91
Pecos shallow†	81

*Shell Petroleum Co., Gulf Pipe Line Co., and Humble Oil & Refining Co. †Shell Petroleum Corp.

Gulf Coast

(January 28, 1937)

Choctaw and Darrow, La. See note below	
Clay Creek, Tex.	$1 00
Garden Island, La.	1 37
Cleveland, Tex.	1 27
Hardin, Tex.	1 15
Tomball, Tex.	1 30
Lafitte, La.	1 24
Livingston, Tex.	1 27
Satsuma	1 20
Heyser, light (Nov. 1, 1936)	1 15
Heyser, heavy (Nov. 1, 1936)	90
Placedo (Nov. 1, 1936)	90
Welsh, La.	98
Tepetate (La.) (Jan. 4, 1937)	1 12

Greta, Refugio, O'Connor, McFadden, Saxet, Segno, Taft, Tomoconnor and Plymouth take same gravity prices as Gulf Coast, Duval, Jim Hogg, Webb and Zapata counties, Texas, and Heyser and Placedo fields take Mirando gravity prices. Jennings, La., 5 cents lower than Gulf Coast prices on each degree. Segno, Texas, takes Gulf Refining Co.'s Gulf Coast prices. Choctaw and Darrow, Louisiana, posted for first time by Standard Oil Co. of Louisiana, start below 21 degrees at 90 cents, with 3-cent differential up to 25 gravity, then 2-cent differential up to 40 and above, $1.36.

Rocky Mountain States

(Effective January 28, 1937)

Iles, Colo., light*	$1 18
Iles, Colo., heavy*	1 12
Greybull, Wyo.*	1 30
Torchlight, Wyo.*	1 30
Grass Creek, Wyo., light.*†	1 30
Grass Creek, Wyo., heavy (Nov. 4, 1936)*†	62
Hamilton Dome, Wyo. (Nov. 4, 1936)*	57
Elk Basin, Wyo., light*†	1 30
Frannie, Wyo., heavy*	62
Frannie, Wyo., light	82
Hogback, N. Mex.*	1 33
Pondera, Mont. (Jan. 26, 1936)*	1 05
Salt Creek, Dutton Creek and Midway, Wyo., take Stanolind's Oklahoma prices on a gravity basis.	
Big Muddy, Wyo.†	1 23
Rock Creek, Wyo.†	1 20½
Lea County, N. M. (see West Texas gravity table).	
Artesia, N. Mex.	90
Maljamar, N. Mex.	90
Canon City and Florence, Colo.	1 10
Florence, Colo.	98
Lance Creek, Wyo.	97
Sunburst, Mont. (June 5, 1936)	1 20
Cat Creek, Mont.	1 40
Cut Bank, Mont.	1 35

*Stanolind Oil & Gas Co. †Ohio Oil Co. ‡Continental Oil Co. Cut Bank by Toronto Pipe Line Co.

Middle Western States

OHIO OIL CO.
(Effective January 28, 1937)

Lima	1 25
Illinois	1 35
Princeton, Ind.	1 35
Midland, Mich.	1 42
West Branch, Mich.	1 26
Buckeye (March 16, 1937)	1 39½
Arenac, Mich.	1 26
Muskegon, Mich.	1 00
Eastern Kentucky:	
Big Sandy River	1 42
Kentucky River	1 50
Western Kentucky	1 40

Midland, Mich., price posted by Simrall Corp. and Pure Oil Co. includes Greendale, Porter, Beaverton, Crystal and equal grades. West Branch and Arenac by Simrall Corp., effective January 29. Eastern Kentucky crude purchased by Ashland Refining Co., Ashland, Ky. Buckeye posted by Simrall Corp. and Pure Oil Co.

Southwest Texas

(January 28, 1937)

Pettus	1 37
Salt Flat, Darst Creek, Hilbig, Carroll Clark, Zoboroski	1 09
Luling	1 00
Lytton Springs	1 12

Saxet and Taft take same gravity table as Gulf Coast.

North Louisiana and Arkansas

Smackover, all grades	$ 90
Tullos and Urania	1 02
El Dorado East field	90
Union County, Ark.	90
Ouachita County, Ark.	90

Eastern States

TIDE WATER PIPE LINE CO.
(Effective Feb. 24, 1937)

Bradford, Pa.	$2 67
Allegany, N. Y.	2 67

SOUTH PENN OIL CO.
(Effective Feb. 24, 1937)

Pennsylvania Grade Oil in National Transit Lines (Bradford field)	2 67
Pennsylvania Grade Oil in Southwest Pennsylvania Lines	2 42
Pennsylvania Grade Oil in Eureka Pipe Line lines	2 37
Pennsylvania Grade Oil in Buckeye Pipe Line lines	2 22
Corning Grade Oil in Buckeye Pipe Line Co.'s lines (Sept. 18, 1936)	1 32

PENNZOIL CO.
(Effective Feb. 24, 1937)

Pennsylvania Grade Oil in National Transit Lines:	
Group A Includes Cochran, Franklin, Hamilton and Doolittle districts.	2 67
Group B Includes Tidioute district.	2 66
Group C Includes Turkey and Tidioute districts.	2 65
Group D Includes Bear Creek and Porkey districts.	2 64
Group E Includes Eldeneau, Bull Creek, Rough Run, Carbon, Dipner, Bredlin, McJunkin, Jameson, Kenerdell, Emlenton, Tiona, Lacey and Kinzua districts.	2 61

Price depends on lengths of pipe line haul to plant at Oil City.

PURE OIL CO.
(Effective Feb. 24, 1937)

Cabin Creek, W. Va.	2 37
Bradford Hollow, W. Va.	2 37
Kelly Creek, W. Va.	2 37

Canada

Ontario (Sept. 9, 1933)*	
Petrolia	$2 10
Oil Springs	2 17
Turner Valley, Alberta province (Dec. 16, 1936):†	
Clear naphtha	$2 60
Discolored naphtha, 65 gravity and higher	2 36
Discolored naphtha and crude oil, 40-40.9 gravity	1 55
Increasing 3 cents for each degree of gravity with top price for 64-64.9 gravity	2 27

These prices delivered field tankage.
*Imperial Oil, Ltd.
†Imperial Oil, Ltd., and Regal Oil & Refining Co. On crude oil alone British American Oil Co. posted above prices on December 9, 1936.

Mexico

Panuco*	$1 24

*In U. S. currency, f.o.b. ship, based on February spot market transactions.

Rocky Mountain Runs

Daily average production estimates for week ended April 17:

	Bbls.
WYOMING	
Salt Creek	16,350
Big Muddy	1,400
Badger Basin	210
Black Mountain	70
Byron	3,210
Dallas Derby	530
Dutton Creek	40
Elk Basin	850
Frannie	2,000
Garland	2,560
Grass Creek	1,990
Hamilton dome	1,670
Hidden dome	500
Hudson	360
LaBarge	1,080
Lance Creek	11,490
Lost Soldier	820
Medicine Bow	2,800
Midway	10
Oregon Basin	3,400
Osage	750
Pilot Butte	20
Quealy dome	650
Rock River	1,310
Poison Spider	230
Teapot	20
Waugh dome	330
Total Wyoming	54,650
MONTANA	
Buckley Border	190
Cat Creek	580
Cut Bank	9,000
Dry Creek	310
Kevin-Sunburst	3,900
Lake Basin	30
Pondera	1,040
Total Montana	15,060
COLORADO	
Florence	170
Fort Collins and Wellington	250
Iles dome	3,270
Moffat	410
Orchard	20
Rangely	70
Tow Creek	130
Total Colorado	4,320
NEW MEXICO	
Cooper	7,250
Eaves	1,070
Eunice	31,500
Hardy	1,000
Hobbs	22,100
Jal	1,500
Langlie	1,200
Lynch	900
Lynn	280
Mattix	1,200
Monument	30,100
North Lynch	60
Penrose	1,850
Rhoades	70
Skelly	1,150
South Eunice	1,100
Vacuum	20
Artesia	3,300
Getty	500
Hogback	200
Rattlesnake	530
Table Mesa	100
Total New Mexico	106,980
Total Rocky Mountain region	181,010

G. H. Trueblood, of the Texas Railroad Commission, has been transferred from the Corpus Christi, Tex., office to East Texas where he will be employed in the tender department.

Crude Prices by Gravities

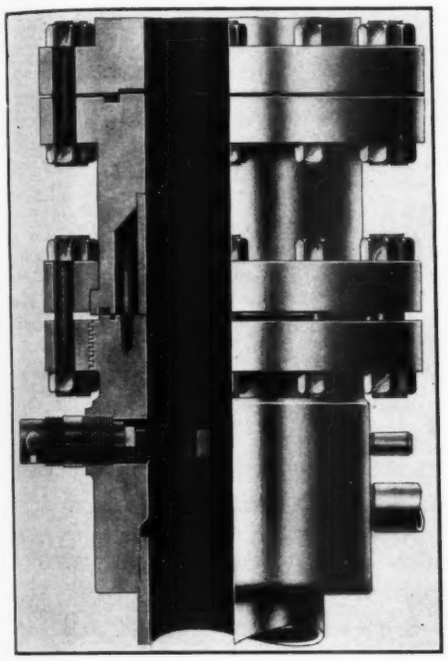
	Oklahoma-Kansas	Oklahoma-Kansas	North and Central Texas	East Central Texas (Mexia district)	North Louisiana-Arkansas	Gray County, Texas	Hutchinson-Carson counties, Texas	Rodessa, Louisiana-Texas and Panola County, Texas	Conroe, Tomball, Raccoon Bend, Satsuma, Texas	Gulf Coast	Gulf Coast	West Texas except Pecos County, Lea County, N. Mex.	Mirando district, Texas	Marion County, Texas	Government Wells, Texas	Anahuac, Texas	White Castle, Louisiana	Iowa, Louisiana	Cayuga, Texas
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Bel. 18										$ 90									
18-18.9										.92									
19-19.9										.94						$ .92	$ .94	$ .84	
20-20.9										.96	$ .95		$ .90		$ .90	.94	.96	.86	
21-21.9										.98	.98		.93		.93	.96	.98	.88	
22-22.9										1.01	1.01		.96		.96	.98	1.01	.91	
23-23.9										1.04	1.04		.99		.99	1.00	1.04	.94	
24-24.9										1.07	1.07		1.02		1.02	1.02	1.07	.97	
Bel. 25		$ .98			$ .90			$ .93						$ .90					$ .88
25-25.9		1.00			.92			.95		1.10	1.10	$ .78	1.05	.92		1.04	1.10	.99	.90
26-26.9		1.02			.94			.97		1.13	1.13	.80	1.08	.94		1.06	1.13	1.03	.92
27-27.9		1.04			.96			.99		1.15	1.15	.82	1.10	.96		1.08	1.15	1.05	.94
28-28.9		1.06			.98			1.01		1.17	1.17	.84	1.12	.98		1.10	1.17	1.07	.96
Bel. 29	$1.06		$ .96	$1.03					$1.20										
29-29.9	1.08	1.08	.98	1.05	1.00			1.03	1.22	1.19	1.19	.86	1.14	1.00		1.12	1.19	1.09	.98
30-30.9	1.10	1.10	1.00	1.07	1.02			1.05	1.24	1.21	1.21	.88	1.16	1.02		1.14	1.21	1.11	1.00
31-31.9	1.12	1.12	1.02	1.09	1.04			1.07	1.26	1.23	1.23	.90	1.18	1.04		1.16	1.23	1.13	1.02
32-32.9	1.14	1.14	1.04	1.11	1.06			1.09	1.28	1.25	1.25	.92	1.20	1.06		1.18	1.25	1.15	1.04
33-33.9	1.16	1.16	1.06	1.13	1.08			1.11	1.30	1.27	1.27	.94	1.22	1.08		1.20	1.27	1.17	1.06
34-34.9	1.18	1.18	1.08	1.15	1.10			1.13	1.32	1.29	1.29	.96	1.24	1.10		1.22	1.29	1.19	1.08
Bel. 35						$ .96	$ .91												
35-35.9	1.20	1.20	1.10	1.17	1.12	.98	.93	1.15	1.34		1.31	.98	1.26	1.12		1.24		1.10	
36-36.9	1.22	1.22	1.12	1.19	1.13	1.00	.95	1.17	1.36		1.33	1.00	1.28	1.14		1.26			
37-37.9	1.24	1.24	1.14	1.21	1.16	1.02	.97	1.19	1.38		1.35	1.02	1.30	1.16		1.28			
38-38.9	1.26	1.26	1.16	1.23	1.18	1.04	.99	1.21	1.40		1.37	1.04	1.32	1.18		1.30			
39-39.9	1.28	1.28	1.18	1.25	1.20	1.06	1.01	1.23	1.42		1.39	1.06	1.34	1.20		1.32			
40,over	1.30	1.30	1.20	1.27	1.22	1.08	1.03	1.25	1.44		1.41	1.08	1.36	1.22		1.34			

Column 1—Companies posting are Barnsdall, Bell, Champlin, Continental, Cushing, Derby, Dickey, Eason, El Dorado, Empire, Falcon, Globe, Gulf, Johnson, Kanotex, National, Phillips, White Eagle, Stanolind, Sunray, Texas, Sun, Vickers and Wilcox.
Column 2—Anderson & Prichard, Carter, Cosco, Deep Rock, Magnolia, Mid-Continent, Pure, Rock Island, Shell, Sinclair, Skelly and Tide Water.
Column 3—All purchasers.
Column 4—Humble Oil & Refining Co. and Sinclair Crude Oil Purchasing Co.
Columns, 5, 6, 7 and 8—All purchasers.
Column 9—Humble Oil & Refining Co. and Sun Oil Co. Tide Water Oil Co.'s schedule starts at 35 degrees, $1.34 with 2-cent spread up to 40 and over at $1.44. (Raccoon Bend prices are for deep sand oil.)
Column 10—The Texas Co. (Gulf Refining Co. pays same prices up to and including 34 gravity, but continues its 2-cent spread up to 40 and over at $1.41.)
Column 11—Humble Oil & Refining Co., Sinclair Prairie Oil Marketing Co., Sun Oil Co.
Column 12—All purchasers.
Column 13—Humble Oil & Refining Co.
Column 14—Magnolia Petroleum Co.
Column 15—Sun Oil Co.
Column 16—Gulf Refining Co.
Columns 17 and 18—Shell Petroleum Corp.
Column 19—Tide Water Oil Co.

NEW OR IMPROVED EQUIPMENT

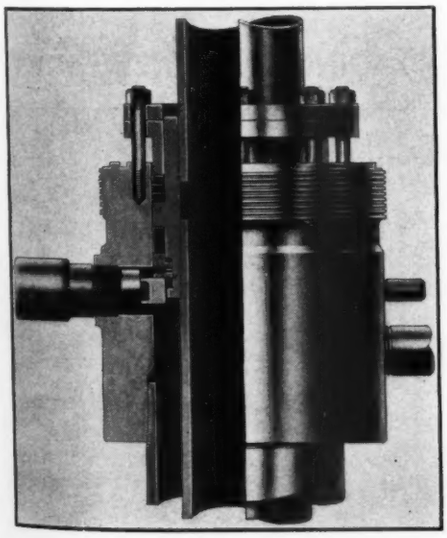
Retractable - Seat Casinghead Introduced by Gulf Coast

Gulf Coast Machine & Supply Co., Beaumont, Tex., has placed on the market a true, full-hole retractable-seat casinghead, designated as type J. The retractable seat normally remains withdrawn into the housing in the inner wall of the head,



Shows type J head while well is being drilled and position of dogs while casing is being run

making possible a full cylindrical opening through the head, thus eliminating obstructions to drilling or setting operations. It is not necessary to use a larger blowout-preventer or to rebore the blowout-



After well has been completed

preventer to a larger size in order to take care of suspension.

The seat is easily advanced to a position for supporting the inner casing by making a half turn of a small lever on the outside of the head. When advanced for supporting the inner casing, the dogs of the seat form practically a solid, uniform supporting ring of enormous strength. In a test in the presence of engineers the seat is reported to have withstood a load of 630,000 pounds.

It is easy to stretch the casing after cementing by simply pulling up until the hanger coupling is above the retracted seat, which is then expanded to allow the flange of the hanger coupling to rest upon it. The head tests over 6,000 pounds without clamps or any load other than the gland itself. Two seal-offs are made with high-pressure braided asbestos packing. The upper packing can be changed under pressure. The body is made of forged steel and the hanger of Max-El forging. The blowout-preventer adapter flange is threaded onto the head, saving time in putting on and taking off.

"Caterpillar" Tractor Equipped With Trackson Pipe-Layer

"Caterpillar" RD6 and R5 tractors are now available equipped with Trackson pipe-layers, it is announced by Caterpillar Tractor Co., Peoria, Ill. Three additional models of "Caterpillar" track-type tractors will be on the market with Trackson pipe-layers in the near future, providing a complete line of these units.

The machines are rugged, but fast and responsive to pipe-handling needs. They lift, lower, carry and bend pipe, and serve as efficient side cranes for other heavy-duty lifting service. To obtain maximum lifting capacity with minimum counterweight the operating mechanism is located on the side opposite the boom. Operation is simple with all control levers within easy reach of the driver. Simplified construction permits easy access to all parts of the tractor and gives the operator an unobstructed view of the work.

The entire structure can be removed easily and quickly when the tractor is to be used extensively for other work. In operation the load- and boom-lines are raised and lowered under power by means of worm-driven winches, thus insuring greater safety and complete control of the load. Three speeds in either direction for both boom- and load-line drums are provided. Power for driving the pipe-layer is from the "Caterpillar" rear power takeoff through a ball-bearing-mounted friction clutch. Operation is therefore independent of the tractor clutch and saves wear on that part.

Addition Made to Hygrade Line

Foote Brothers Gear & Machine Corp., Chicago, has added a new size to its line of Hygrade worm-gear speed-reducers. It is size 7 HG and has center distance of 7¼-inch with ratios of 3⅞ to 1 up to 2,450 to 1. Horsepower ratings range from one-half to 27½ in single-reduction and output torque ratings to 12,600- to 21,000-inch pounds in double-reduction types. Single-reduction horizontal, single-reduction vertical and double-reduction types are available. The line now covers a total range in horsepower capacities of .06 to 200 on single-reduction types and corresponding capacities on double-reduction types.

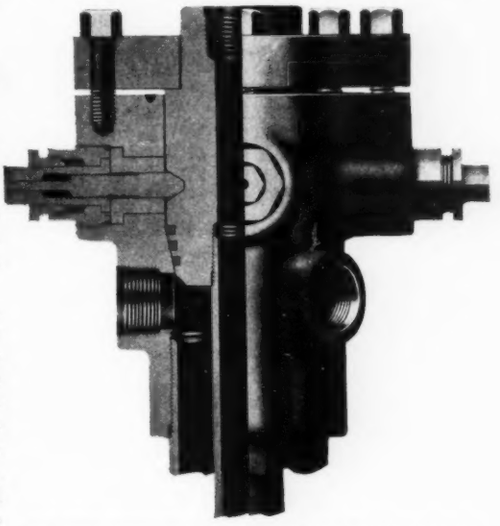
Braden Changes Company Name

The Braden Winch Service Co., Tulsa, has announced a change in its corporate name to Braden Winch Co. This organization has been manufacturing truck-bed winches 14 years and has national distributing facilities.

For Completion of Well Under Pressure Without Killing It

Beaumont Iron Works Co., Beaumont, Tex., has placed on the market two 6,000-pound test pressure tubing-heads, designed to be used with blowout-preventer equipment for completion of the well under pressure. According to the manufacturer, these new tubing-heads permit drilling in, running and landing tubing, setting packer, and reworking the well under pressure without killing the well with heavy mud. They are designated as type HX-1070 and HX-1075.

The accompanying sectional drawing of the type



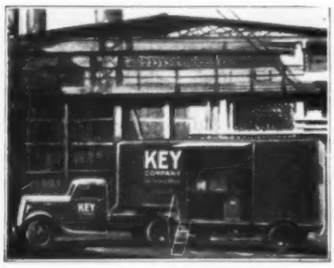
HX-1070 shows the basic principle of design of both heads. T-segment bolts in the body are backed out until they seal off against tapered brass rings provided in the recess of thrust bolts. The body screws on the oil-string, and the master gatevalve bolts down on metal seal ring on top of the body. The blowout-preventer adapter flange bolts down on the metal seal ring on top of the gatevalve. The well is drilled in and tubing run through blowout-preventers. The last joint of tubing is cut to the desired length or built up with pup joints, and screwed into the hanger, which seats in the tapered bowl of the body and is packed off with three rings of hydraulic packing. The four T-segment bolts, each provided with stuffing-box are screwed into the hanger groove to seal in the well before the blowout-preventer equipment is removed. After blowout-preventer equipment is stripped off, a split locking-ring bolts down over a lip on the hanger in place of the adapter flange.

The type HX-1070 does not provide a means of setting packer at the same time tubing is run. This feature, however, is included in the type HX-1075, which is provided with a J-tool hanger to facilitate setting packer. Otherwise, the two heads are identical in design, all parts being interchangeable. If, after installing the "H-1070" Tubing Head, it becomes necessary to set a packer, the J-tool hanger can be substituted for the regular hanger. After the well has been brought in through either of the heads, it can be reworked without being killed by installing blowout-preventer equipment.

Broderick & Bascom Rope Co., St. Louis, Mo., has kept the April number of the Yellow Strand up to its usually high standard of interest.

Innovation Introduced by Key Is Machine Shop on Wheels

Key Co., East St. Louis, Ill., pioneer manufacturer of return-bend fittings for oil refinery



stills, now offers refiners the services of a fully equipped traveling machine shop. This innovation consists of a large truck, containing all the special equipment necessary to handle a complete reconditioning job on return-bend fittings. It is manned by experienced mechanics and travels direct to the refinery yard.

According to the company the best of return-bend fittings will eventually show signs of wear, but they do not necessarily need to be discarded and replaced. When leaks develop around the closure plugs of old fittings, the condition usually can be remedied by refacing the plugs and equipping the plug-holes with renewable seats. In the past, fittings either had to be returned to the factory for reconditioning, or special equipment had to be shipped to the yard and a temporary shop set up near the stills.

Here and There With Men Who Manufacture Equipment

International Supply Co. has opened a supply store in Great Bend, Kans. R. T. Cheney is store manager and Jack Harris field man.

United Supply and Manufacturing Co. has opened a supply store in Chase, Kans., with E. R. Will, store manager, and R. A. (Buck) Weaver, field man.

E. P. (Ned) Crawford has been appointed factory representative in the Pennsylvania territory for Billings & Spencer Co. of Hartford, Conn., manufacturer of forged tools, commercial drop-forgings, drop-forging hammers and die-making machinery. His headquarters will be in Philadelphia.

M. B. Henneberger, for 15 years a salesman for Landis Machine Co., Waynesboro, Pa., has been placed in charge of that company's advertising department.

Atlas Supply Co. has appointed Bruce E. Gold, formerly with Caterpillar Tractor Co., as sales engineer, with headquarters in Tulsa. Before his connection with Caterpillar, Mr. Gold was assistant chief engineer of the Weber Engine Co., Kansas City, Mo.

Huntley & Huntley, 2711 Grant Building, Pittsburgh, Pa., have installed a seismic reflection service under the direction of N. Rutherford, of the University of Pittsburgh.

Quaker State Oil Refining Corp., Oil City, Pa., has been elected to membership in the Association of National Advertisers, Inc. H. S. Morris will represent the company.

Patterson-Ballagh Corp., Ltd., Los Angeles, Calif., has opened a Mid-Continent office and warehouse at 1507 Maury Street, Houston, Tex.

McNeely mud-screens and drives will be distributed in all areas east of Pacific states by J. W. McNeely, who has opened headquarters at 2935 Jensen Drive, Houston, Tex. R. J. Carlson in Houston and J. J. Durham in Rodessa are salesmen.

Lincoln Electric Co., Cleveland, Ohio, has appointed Don McCormick as arc-welding consultant for the Kansas City, Mo., office at 1818 Main Street.

Promotion of George M. Worthington, southwest district manager of International Business Machines Corp., with headquarters in St. Louis, Mo., to be manager of the company's oil department, is announced. Mr. Worthington will supervise all the company's electric bookkeeping and accounting machine business in the oil industry throughout the world.

A new branch store has been opened in Alice, Tex., by Industrial Supply Co., Inc., 500 Eighth Street, Wichita Falls, Tex., of which Jerry Vinson and Everett McCullough are the principal owners and managers. The new store will carry a full line of oil-field supplies and equipment.

Wrench Pulls Down Headbolts So Tension Is Kept Uniform

The importance of pulling down headbolts so that they have the uniform tension, prompted Automotive Maintenance Machinery Co., 2100 Commonwealth Avenue, North Chicago, Ill., to develop

its tension-indicating wrench. This new tool is being used by oil companies conducting laboratory and field tests to determine effects various headbolt tensions have on power and oil consumption.

Guesswork as to uniform tension is eliminated, along with distortion, gasket failure, bearing trouble and loss of power. The dial, an integral part of the wrench and unaffected by heat or cold, shows tension when either tightening or loosening nuts. The wrench, furnished with standard half-inch shank for popular makes of sockets, weighs 6¼ pounds.

Ensign Branch in Chicago

Ensign Carburetor Co., Huntington Park, Calif., has a fully equipped, stocked and manned branch at 2644 South Michigan Avenue, Chicago, for the convenience of customers in the East and Midwest. The company manufactures carburetting equipment for all fuels and for all types of automotive, stationary and marine engines.

Tulsa Purchasing Agents Turn Out for Bartlesville Day

Bartlesville Day, in honor of Bartlesville members of the Purchasing Agents Association of Tulsa, drew a record attendance of purchasing agents and guests as is evidenced by the accompanying picture taken at the Frank Phillips ranch in the Osage Hills near Bartlesville. The program included a tour of the 55,000-acre ranch, a big banquet and a business meeting. The Bartlesville members who acted as hosts were C. M. Taylor, H. D. Patridge and Glen Horton, with Indian Territory Illuminating Oil Co.; H. E. Koopman, M. B. Heine and H. E. Kaiser, with Phillips Petroleum Co., and George E. Goddard and George Barnard, with the Empire Companies.

BESIDES TOURING THE FRANK PHILLIPS RANCH, HOLDING A BUSINESS MEETING

Coffing's New Model Hoist Has Wide Range of Oil-Field Use

The Coffing Hoist Co., Danville, Ill., has developed a new model, called the R-G-L Coffing ratchet gravity lowering hoist, which is convertible into 2-, 4- and 6-ton capacity. This hoist is especially adapted for raising and lowering pipe on pipe-line construction jobs, but may also be used for many other operations around the oil fields, the refinery and the natural gasoline plant. It can be used at drilling rigs and pumping

rigs for lifting and pulling heavy equipment. It can be used for bending pipe and tightening rodlines. In refineries it can be used for the lifting and skidding of heavy machinery. Due to its small compact size, it comes in very handy for loading and unloading trucks where heavy machinery is being handled. Wherever a lift or a pull is needed this new piece of Coffing equipment has an important place.

Bulletins, Booklets and Other Literature for the Trade

A bulletin on Flexarc motor-driven welders and bare generators is offered by Westinghouse Electric and Manufacturing Co., East Pittsburgh, Pa.

A book of unusual attractiveness is the 74-page volume entitled "The Dependable Diesel," illustrating installations made by Cummins Engine Co., 220 Wilson Street, Columbus, Ind. Splendidly pictured articles discuss the diesel in modern industry. One of particular interest to oil men is "Wildcats and Diesels." The book covers both manufacturers who are using Cummins engines as original equipment and reports on installations in the field.

Norris Brothers, Inc., Robinson, Ill., has ready for distribution a new 32-page catalog of oil well supplies. Attention is called to the fact 1937 marks 70 years of continuous manufacture of oil-field equipment by three generations of the Norris family.

Bulletin 72, prepared by Bridgeport Machine Co., Wichita, Kans., contains information about the company's new time- and labor-saving bull-wheel frame which completely unitizes the bull-wheels used with cable-tool rigs.

Two new catalogs are offered by Blackhawk Manufacturing Co., Milwaukee, Wis., one on Portopower, a remotely controlled hydraulic ram and one on hydraulic hand service jacks.

The Master line of steam scrubbers for drilling rigs, engines, turbines, power plants, steam processing refineries, etc., is described in a catalog sent on request by Master Separator and Valve Co., 607 South Hill Street, Los Angeles, Calif.

John Waldron Corp., New Brunswick, N. J., has issued a two-color bulletin (No. 53) describing and illustrating the new Francke flexible coupling.

Hochenauer Elected Director

Carl J. Hochenauer, vice president of the Southwest Supply Co. of Pittsburgh, Pa., and a well-known oil well supply man with headquarters in Tulsa, was elected a director of the Driscoll Construction Co. of Pueblo, Colo., at the annual directors' meeting held in that city, April 3. While it is understood that Mr. Hochenauer will devote part time to the affairs of the Driscoll company, this will not interfere with his present affiliations or duties and his headquarters will remain in Tulsa, with offices in the Philtower Building. The Driscoll concern is one of the oldest and largest highway and general construction concerns in the Rocky Mountain area, having been established since 1912, and at the present time it employs approximately 1,000 men and operates several hundred pieces of equipment consisting of trucks, caterpillar tractors, draglines, etc. It also owns and operates extensive rock, sand and gravel properties.

Mr. Brown to Direct Overseas Sales for Baash-Ross Tool

Appointment of I. Frank Brown as foreign sales representative of Baash-Ross Tool Co., Los Angeles, Calif., and Houston, Tex., is announced.

I. FRANK BROWN

Mr. Brown, who maintains offices at 30 Rockefeller Plaza, New York, has acted as sales representative in foreign oil fields for many years.

Union Wire Rope Election

At the annual meeting of stockholders and directors of Union Wire Rope Corp. in the company's Tulsa, Okla., offices A. F. Beringer, president of P. W. Brooks & Co., Inc., New York, was elected to the board of directors, succeeding Frank L. Moore, resigned. Directors reelected were R. H. Bartlett, H. R. Gruber and H. O. McClure, Tulsa; Phil D. Morelock, Washington, D. C.; M. G. Ensinger, and E. A. Reedy, Kansas City, Mo. Officers elected for the coming year are R. H. Bartlett, chairman of the board; M. G. Ensinger, president and general manager; H. R. Gruber, vice president and sales manager; J. H. Hatch, vice president and treasurer; J. C. Sell, secretary and assistant treasurer; H. M. Lawrence, assistant secretary and assistant treasurer; W. Voigtlander, chief engineer, assistant secretary and assistant treasurer.

AND SITTING AT A BIG BANQUET, PURCHASING AGENTS POSED FOR A PICTURE

Oil Man's Calendar

April

21-23—Peoria, Ill.—Society of Automotive Engineers, Tractor Meeting, Hotel Pere Marquette.

26-28—Hot Springs, Ark., Western Petroleum Refiners Association, annual meeting, Arlington Hotel.

May

4-9—White Sulphur Springs, W. Va., Society of Automotive Engineers, summer meeting, Greenbrier Hotel.

6-7—Columbus, Ohio, American Petroleum Institute, Division of Production, Eastern district, Deshler-Wallick Hotel.

10—Kansas City, Mo., Spring meeting Natural Gas Department, American Gas Association.

19-21—Tulsa, Natural Gasoline Association of America, annual meeting, Hotel Tulsa.

20-26—Findlay, Ohio—Findlay's Golden Celebration of Oil and Gas.

23-27—Pittsburgh, Pa., National Association of Purchasing Agents (Oil Company Buyers' Group) annual convention, William Penn Hotel.

26-28—Fort Worth, Tex.—National Oil Well Superintendents Association.

June

1-3—Colorado Springs, Colo., American Petroleum Institute, mid-year meeting, Broadmoor Hotel.

7—Kansas City, Mo., Oil Field, Gas Well-Refinery Workers of America.

10-12—Pennsylvania Grade Crude Oil Association, annual meeting, on Great Lakes S.S. "Seeandbee," sailing from Buffalo, N. Y.

11—Santa Fe, N. M., Interstate Oil Compact Commission meeting.

14-19—Paris, France, Second World Petroleum Congress, during International Exposition.

25-26—Dallas, Tex., National Oil Scouts Association, annual meeting, Baker Hotel.

June—July

28-July 2—New York, American Society for Testing Materials, fortieth annual meeting, Waldorf-Astoria Hotel, together with fourth A.S.T.M. exhibit of testing apparatus and related equipment.

September

(?)—San Francisco, Calif., North American Gasoline Tax Conference.

15-17—Atlantic City—National Petroleum Association, annual meeting, Hotel Traymore.

27—Cleveland, Ohio, American Gas Association, nineteenth annual convention.

September—October

27-Oct. 1—Rochester—National Association of Petroleum Retailers, fifth national convention.

October

11-15—Kansas City, Mo.—Twenty-sixth National Safety Congress and Exposition.

11-16—Houston, Tex., Oil-World Exposition.

14-16—Houston, Tex.—Independent Petroleum Association of America, annual meeting.

26—New York, Oil Trades Association of New York.

29-30—Dallas, Tex., Mid-Continent Oil and Gas Association of Texas, annual meeting.

November

9-12—Chicago, American Petroleum Institute, eighteenth annual meeting, Stevens Hotel.

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THE OIL AND GAS JOURNAL
Tulsa, Oklahoma

For Sale—Equipment

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FOR SALE—1 used reconditioned No. 27 S&B chain driven sand reel mounted on steel skid complete less chain and band-wheel-sprocket. $350.00 f.o.b. Oklahoma City. I. T. I. O., Bartlesville, Oklahoma.

PIPE Yard at Lyons, Kansas. 15½" and 12¾" BIGNALL KEELER PIPE MACHINES. LATHES. Cheap long lease. Write Mid-Continent Pipe & Supply Co., Oklahoma City, Oklahoma.

FOR SALE: 75—10" Standard cast iron gasket type flange unions, new and reconditioned—cheap. I. T. I. O., Bartlesville, Oklahoma.

FOR SALE—CO^2 REFRIGERATION MACHINERY in Tulsa, capacity 290 tons.
1 twin compressor, direct connected, 225 h.p.
2 compressors, belt connected, 125 h.p. each.
15 stands condensers, 16 double pipe high, length 20 ft.
3 centrifugal pumps, each 450 ghp @ 90-ft. head, direct connected, 20 h.p. each.
All controllers and switches.
All motors 440 ac, 3-phase, 60-cycle.
Bidder move part now, remainder about July 1.
HORSTER CONSTRUCTION CO., TULSA

FOR SALE: 15—3' x 15' National Tank Company sand hogs—cheap. I. T. I. O., Bartlesville, Oklahoma.

FOR SALE: Several used reconditioned Hughes plunger lift units complete for use with 7" casing and 2⅜" OD or 2⅞" OD tubing. I. T. I. O., Bartlesville, Oklahoma.

FOR SALE: 25,000' of new 2⅞" OD 10 thread 5.73-lb external upset Pittsburgh seamless steel tubing reamed for Hughes plunger lift. Located at our Oklahoma City warehouse. I. T. I. O., Bartlesville, Oklahoma.

25 K.W. and 40 K.W. Gas Engines, 220 volts, D.C. Two 100 K.W. Gas Engine-Generator Sets, 220 volts, D.C. 7x6 Ingersoll-Rand ER-1 Air compressor, Six-inch Oster Pipe Threading Machine. Also large stock of lathes, pipe machines, milling machines, etc. Send for our list.
Terms to suit.
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150 H.P. Miller Gas Engines.
About 14" x 20" Ingersoll-Rand Compressors and other equipment.
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1—Union Tool Co. No. 5-C-3 Ideal draw works and line shaft.
2—14 x 7¼ x 14 Ideal mud pumps.
20" Rotary table.
12 x 12 Ideal twin cylinder semi-enclosed steam engine.
2—6 x 4 x 6 Boiler feed pumps.
1—3¼ K.W. Frost vertical electric generator.
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TULSA, OKLAHOMA

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WANTED: Stripper oil production or wells or leases that are ready for salvage. Address Box H-724, The Oil and Gas Journal, Tulsa, Oklahoma.

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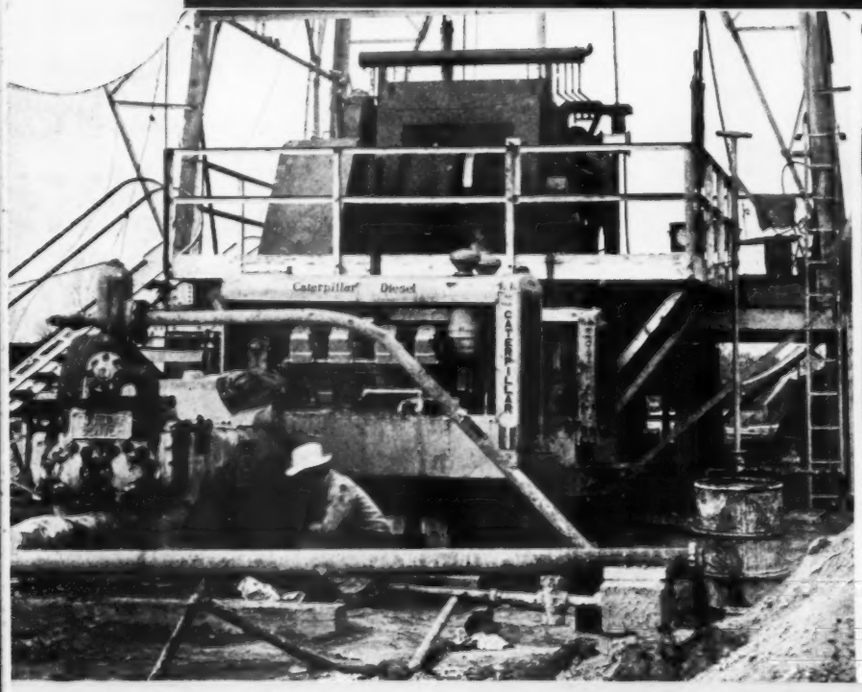
The Oil and Gas Journal, issued weekly by The Petroleum Publishing Company, 114-116 West Second Street, Tulsa, Oklahoma. Subscription prices: Domestic, $6.00 a year; foreign, $7.00 a year. Entered as second-class mail matter December 15, 1911, at the post office at Tulsa, Oklahoma, under the Act of March 3, 1879.

Rotary Rig

"CATERPILLAR" DIESEL ENGINES REDUCE OPERATING COSTS



D17000 and D13000 have engine-to-engine V-belt drive for combined power to operate draw-works. Also both used on drilling below 2700-ft. level. Clutch arrangement allows individual operation of mud pump and rotary table.

CATERPILLAR DIESEL E

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WORLD'S LARGEST MANUFACTURER

or Spudder--

"I AM thoroughly pleased with the performance of my 'Caterpillar' Engines," says Don Danvers. They give him good reason: On his rotary-rig prospecting operation (lower left) near the Fordyce, Texas, field, the fuel-and-lubrication costs for a 160-hp. and a 125-hp. engine totaled around $90 for 2700 feet of average-type drilling. Jointly they consumed only 7½ gallons of Diesel fuel per hour. Draw-works are unitized type with automatic reverse clutch. Pump is a 6x16, using 11-lb. mud.

From another driller, Dave Duncan (Manager Ajax Drilling Co.), comes this interesting comment: "I find 'Caterpillar' Diesel power is the fastest on controls. And what I further like about this engine is its completeness—set it down on the job and it's ready to go to work."

Operating in the Dodge-Denman Pool, Texas, this spudder rig (lower right) reached oil, at 2919 feet, in 30 days of 24-hour drilling. Diesel fuel and lubrication for the 125-hp. engine approximated only $135.

. . . And so on comes report after report voicing complete satisfaction with "Caterpillar" Diesel Engines—telling about their low operating costs, their low maintenance, their steady, dependable performance month in and month out. No other independent source of power is so versatile, economical and easily taken to *any job anywhere*.

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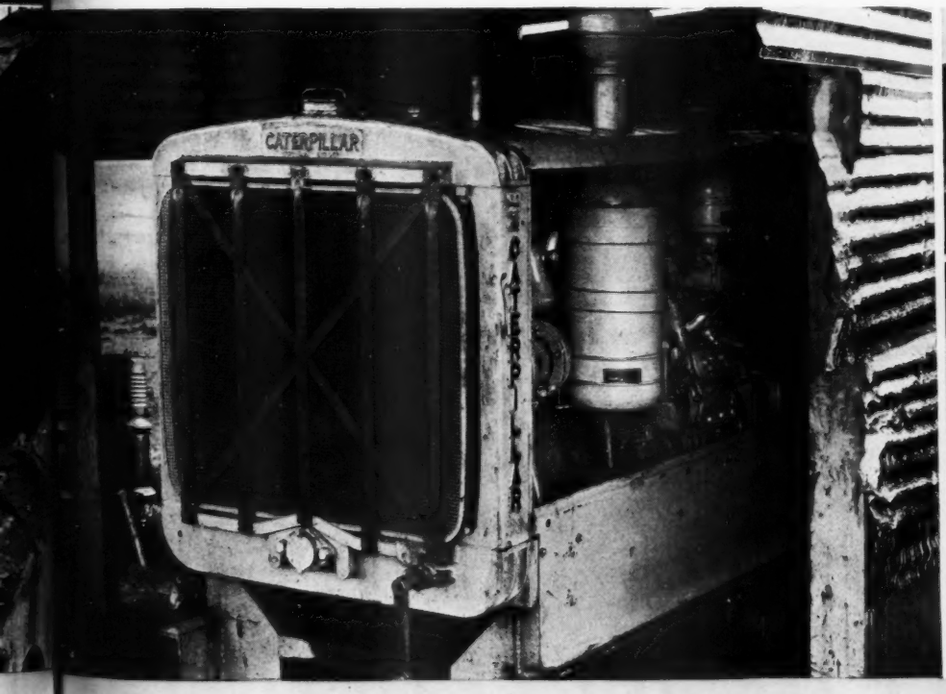

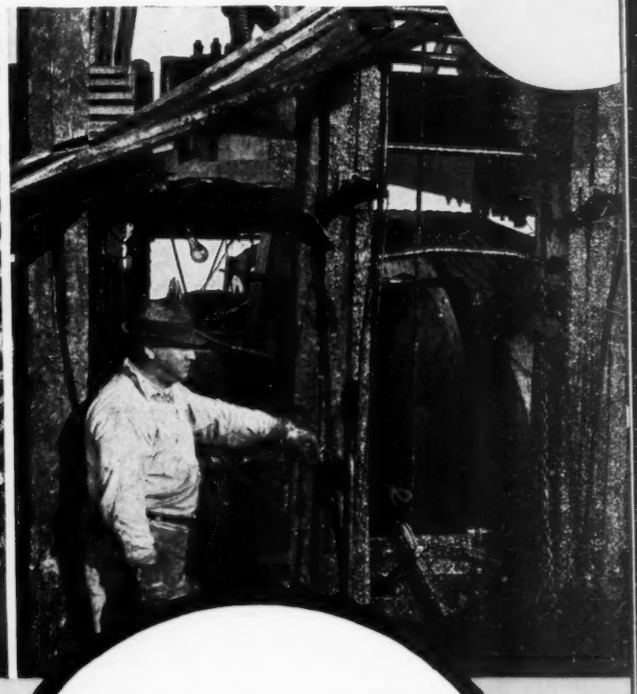

D13000 is connected to spudder through flat-belt drive. With well just spudded in, picture shows cleaning tool in hole. Fuel consumption, 2 gallons per hour.

SEVEN SIZES

D17000 . 8 cyl. . 160 hp.
D13000 . 6 cyl. . 125 hp.
D11000 . 6 cyl. . 100 hp.
D8800 . 4 cyl. . 80 hp.
D7700 . 4 cyl. . 66 hp.
D6600 . 3 cyl. . 60 hp.
D4400 . 4 cyl. . 44 hp.

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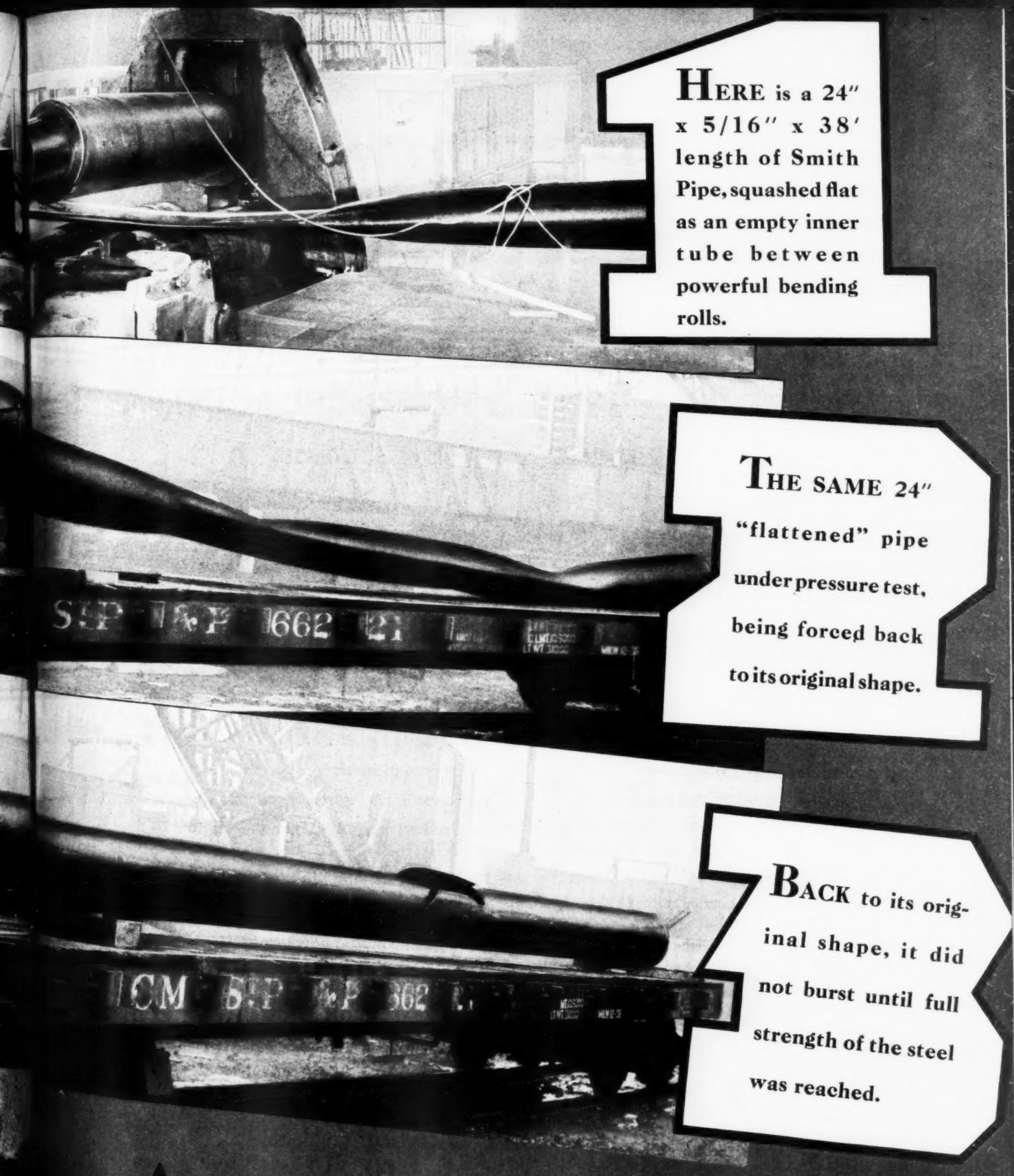

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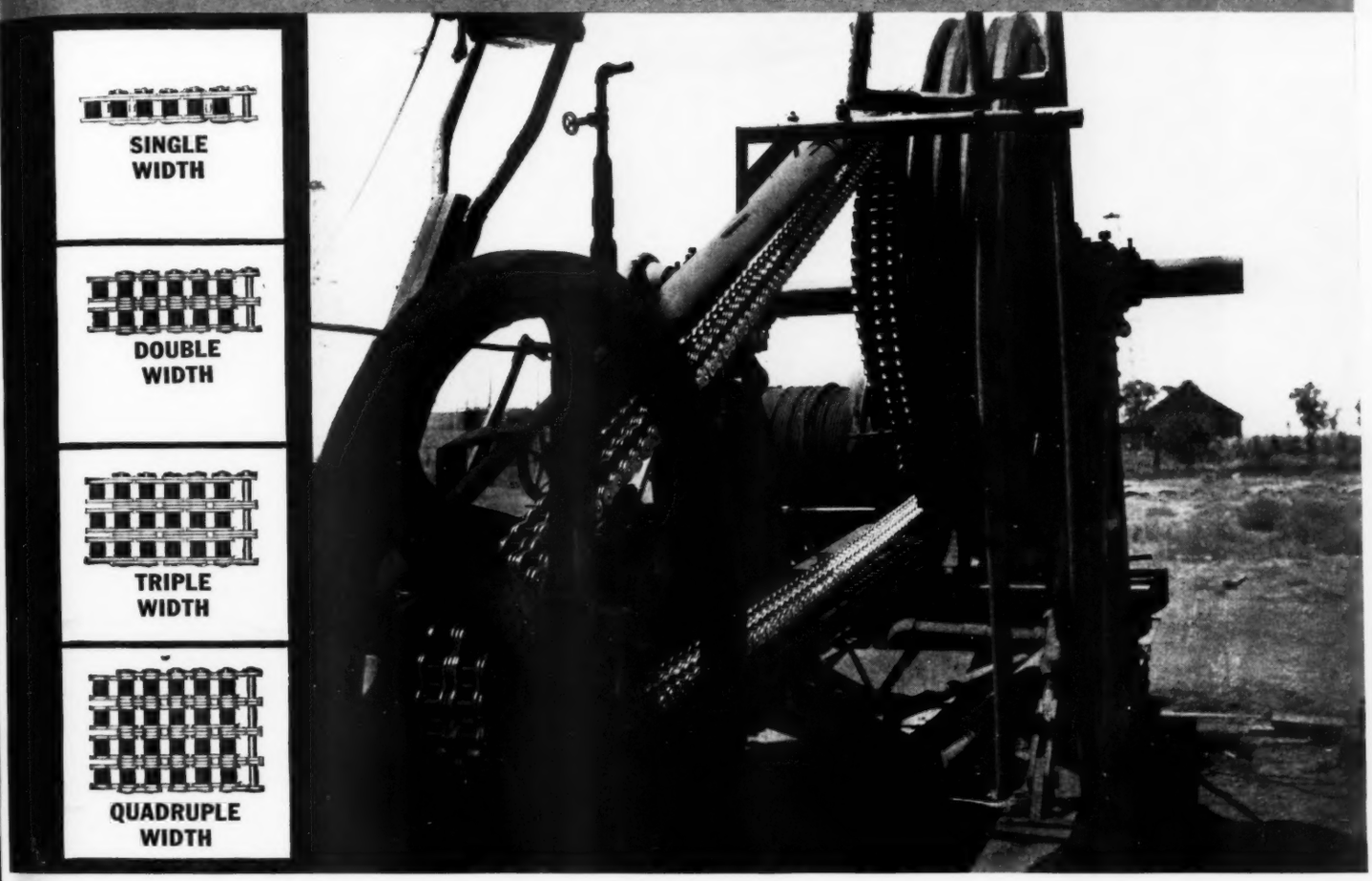

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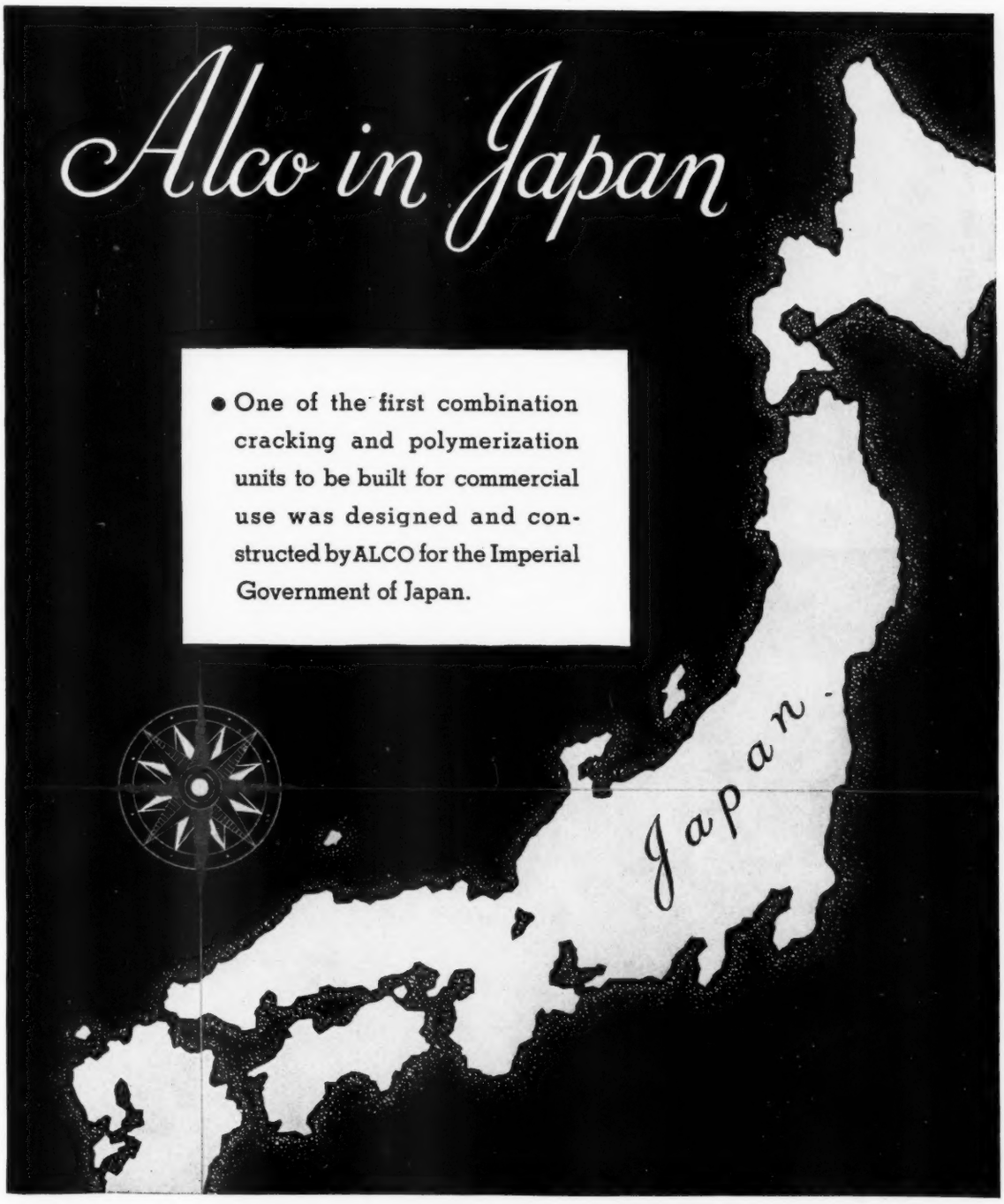
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